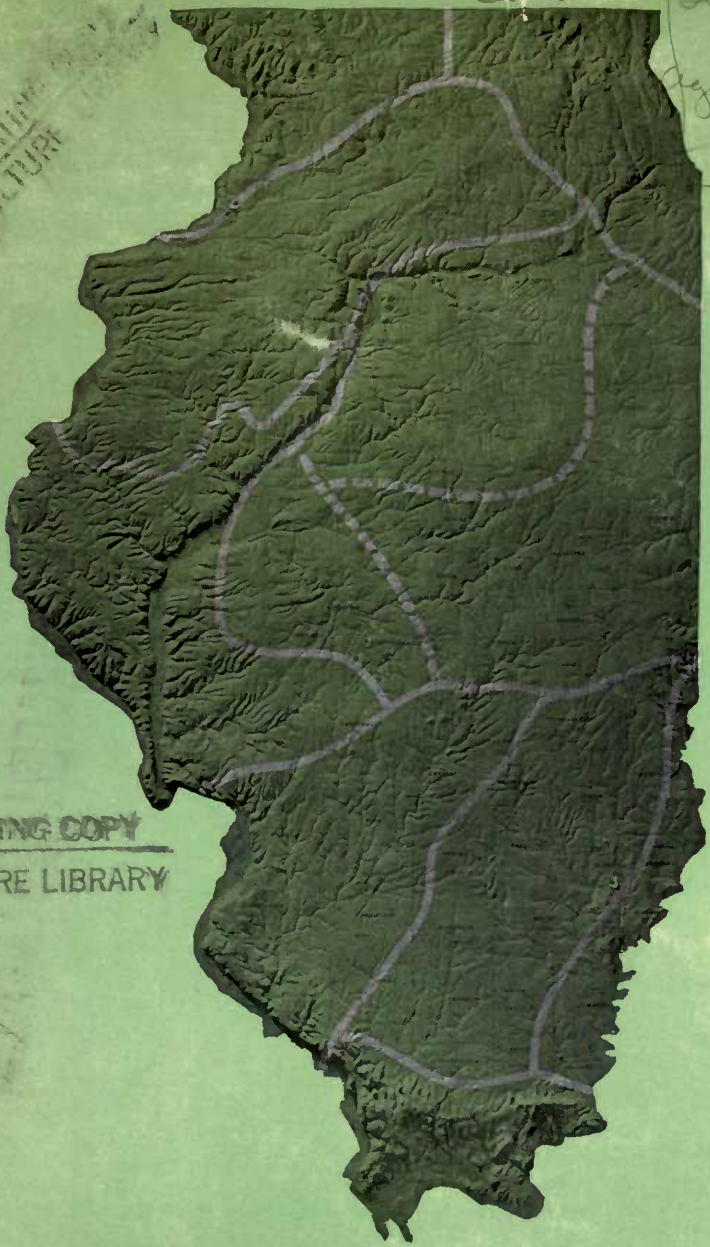


TYPES OF FARMING IN ILLINOIS

An Analysis of Differences by Areas

By R. C. Ross and H. C. M. Case

UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION Bulletin 601

TYPES OF FARMING IN ILLINOIS

An Analysis of Differences by Areas

By R. C. ROSS
and H. C. M. CASE

Bulletin 601

UNIVERSITY OF ILLINOIS · AGRICULTURAL EXPERIMENT STATION
Urbana, Illinois April, 1956

Publications in the Bulletin series report the results of investigations made by or sponsored by the Experiment Station

TYPES OF FARMING IN ILLINOIS

An Analysis of Differences by Areas

By R. C. Ross and H. C. M. Case[1]

ILLINOIS RANKS HIGH as an agricultural state. It stands fourth among the states in the acreage of crops grown, third in the value of crops marketed, and second in the value of livestock and livestock products marketed.

Natural conditions in Illinois, which lies largely in the corn belt, normally favor profitable farming. The average productivity of Illinois soils is high, much of the land is level or gently rolling, and the climate is varied enough to make a wide range of products possible.

Economic conditions are also conducive to a prosperous agriculture relative to other farming regions in the United States. Easy access to markets, improved transportation, and good financial returns have created favorable circumstances. The densely populated area extending east of the Mississippi river and north of a line running east from the southern tip of Illinois includes less than one-sixth of the area of the United States but more than one-half of its population. The 8.7 millions of people within the state itself (less than one-tenth live on farms) consume large quantities of farm products.

A network of hard roads, railroads, and waterways provides excellent transportation to the interior markets of Chicago and St. Louis and from there to all parts of the United States and the world. Developments in transportation have directly affected the establishment of areas for the production of whole milk, vegetable crops, and other perishables.

Farmers in Illinois have, in general, enjoyed good incomes, particularly during the 1940's and early 1950's. Production of both crops and livestock has been at high levels, government-supported prices have been encouraging, and the increased use of capital has added greatly to the production per acre. At the same time, costs have advanced rapidly, especially since World War II, and have held profits in check.

Diversity in farm organization. Illinois farmers receive their income from the sale of many kinds of farm products. Combinations of the major crops (corn, soybeans, oats, wheat, hay) and of livestock (hogs, beef cattle, dairy cattle) form the bases of the organization of the farms. The relative importance of each product varies greatly from

[1] Professors of Agricultural Economics, University of Illinois.

one part of the state to another; in some localities, and particularly on some farms, other products may outrank those named.

Differences in the organization of farms arise chiefly because of the efforts of farmers to adapt their production to the natural conditions of the soil and climate, and to the economic conditions of costs of production, prices, marketing, competition with other areas, and governmental regulations. Fortunately diversity is possible and the individual farmer can exercise a measure of choice. Many farmers, no doubt, are inclined to follow the patterns of production that have developed in their communities. Nevertheless shifting conditions, especially in the economic field, make changes in organization and management necessary.

Purposes of a type-of-farming analysis. The agriculture of a community represents the best judgment of its farmers in regard to the most desirable farm practices. The organization of farms, however, is continually being rebuilt as farmers react to changing conditions. Changes in market demand or soil productivity, or the development of new techniques may make it desirable to alter the systems of farming. Some changes are made because of what farmers expect will take place in the future. The announcement of governmental policies with reference to price supports, acreage controls, or exports, for example, may lead farmers to revise their farming plans.

While changing conditions usually affect all farmers in an area, individual farmers react differently to the same conditions because of differences in their personal situations and judgments. Some of the considerations that enter into their judgments are the erodibility of the soil on their own farms and the proportion that is tillable; the kind of building improvements on their farms; the family labor situation, including the number of children, their ages, and the time desired for their schooling; the financial position, involving degree of indebtedness and availability of credit; and the objectives of the family such as emphasis on community activities, recreation, and other interests away from the farm.

A study of the types of farming and the causes for their development should help farmers, teachers, extension workers, and those interested in research to view more clearly the problems of agricultural adjustment. It should be useful to those who are interpreting the results of research in terms of agricultural practice and enable them to make specific recommendations for definite areas. Ultimately, it should help provide a basis for selecting a system of farming for a particular farm.

The first part of this bulletin describes the natural and economic conditions that influence Illinois agriculture. The second delineates the farming-type areas in the state and shows how the predominant types of farming organization in each area are related to natural and economic conditions. The third discusses each crop and livestock enterprise that plays a part in the prevailing types of farm organization.

Sources of information. The data used as a basis for this study have been obtained largely from the following sources: United States Bureau of Census; United States Weather Bureau; Agricultural Research Service and Agricultural Marketing Service, United States Department of Agriculture; Division of Agricultural Statistics, Illinois State Department of Agriculture; and Illinois State Geological Survey. Much detailed information has also been obtained from the various departments of the Illinois Agricultural Experiment Station, and from interviews with individuals throughout the state.

Major reliance has been placed on the decennial Census of 1950. Occasionally reference is made to data from the Census of Agriculture of 1954, which at the time of publication was available in a preliminary form.

Definition of terms. The term "type of farming" or "system of farming" as used in this study refers to the organization of individual farms according to the emphasis placed on one or more farm enterprises. The classification of a farm depends upon the sources of its income. These may be explained in terms of the kinds and acreages of crops grown, the number and kinds of livestock raised and the livestock products sold, and the relationship between livestock and crop enterprises. Crop sequence, methods of soil treatment, and farming practices, may vary from farm to farm, and yet all the farms may be classed as the same type because of the similarity of the sources from which the income is derived.

By "type-of-farming area" is meant an area in which one or more dominant types of farming can be distinguished and in which natural and economic conditions are almost uniform. In order to describe an area adequately, it is often necessary to discuss a major type of farming and one or two minor types.

Ordinarily the lines of demarcation between areas cannot be sharply defined, and no distinctly dominant type of farming can be recognized near the dividing lines. The organization of farms in these transition zones is determined by physical and economic characteristics of both areas, and consequently, except where marked changes in types of soil occur, the operators in these zones have a wider range of choice.

The action of glaciers in remote times and the action of wind, rivers, and streams afterward have caused wide variations in the land surface of Illinois and in the character of its soils. (Fig. 1)

NATURAL CONDITIONS AFFECTING ILLINOIS AGRICULTURE

Land surface. Illinois stretches over 385 miles in length from north to south and covers an area of 35,798,400 acres or 55,935 square miles.

Variations in topography (land surface) can be traced to the action of glaciers during their advance and to the action of the wind, rivers, and streams afterward. Although much of the surface is nearly level, the topography varies from nearly level prairie where artificial drainage is necessary to remove surface water to rough hilly areas where erosion is a serious problem. A large part of this hilly area cannot be cultivated. Along the rivers are found large areas of bottomland that are in danger of overflow unless protected (Fig. 1).

Glaciers of the Illinoian age covered all of the state except Calhoun county in the west-central part, Jo Daviess county in the northwest corner, and the seven most southern counties. When the glaciers melted away, most of the land surface was a nearly level plain broken only by a few morainic knolls and low ridges. A long period of weathering followed. During this time the upper portion of the drift material was formed into relatively old, strongly developed soils, and the nearly level till plain was partially cut up by headwater erosion of streams and gullies. The glaciers of the Wisconsin age which covered the northeastern one-third of the state of Illinois came at a much later date and upon melting left an undulating to moderately rolling plain broken by a number of fairly prominent moraines. The time since the Wisconsin glacial period has been relatively short and the soil weathering in northeastern Illinois is correspondingly weak.

During the retreat of the different glaciers of the Wisconsin age, a blanket of wind-deposited silt or loess was laid down over most of the glacial drift left by the enormous ice sheets. This loess material is thickest near the wide bottoms of the major rivers and thins to the east and west of these river bottoms. Variations in the thickness and degree of weathering of this loess mantle and the degree of weathering and character of the glacial drift material are responsible, either directly or indirectly, for some of the important differences in the soils throughout the state.

Differences in altitude in Illinois are of small importance so far as types of farming are concerned. The altitude ranges from less than 300 feet above sea level in the extreme southern part of the state to nearly 1,250 feet in the northwest corner. Thirty-five percent of the land area is between 600 and 700 feet above sea level, and 88 percent is between 400 and 800 feet.

Drainage. Four large rivers and one large lake — the Mississippi, Illinois, Wabash, and Ohio rivers, and Lake Michigan — lie within the state or touch its borders. The Illinois river and its tributaries drain 42 percent of the land in the state; small streams flowing into the Mississippi drain 25 percent; the Wabash drains 17 percent; the Ohio, 5 percent; and the streams flowing into Lake Michigan, 1 percent.

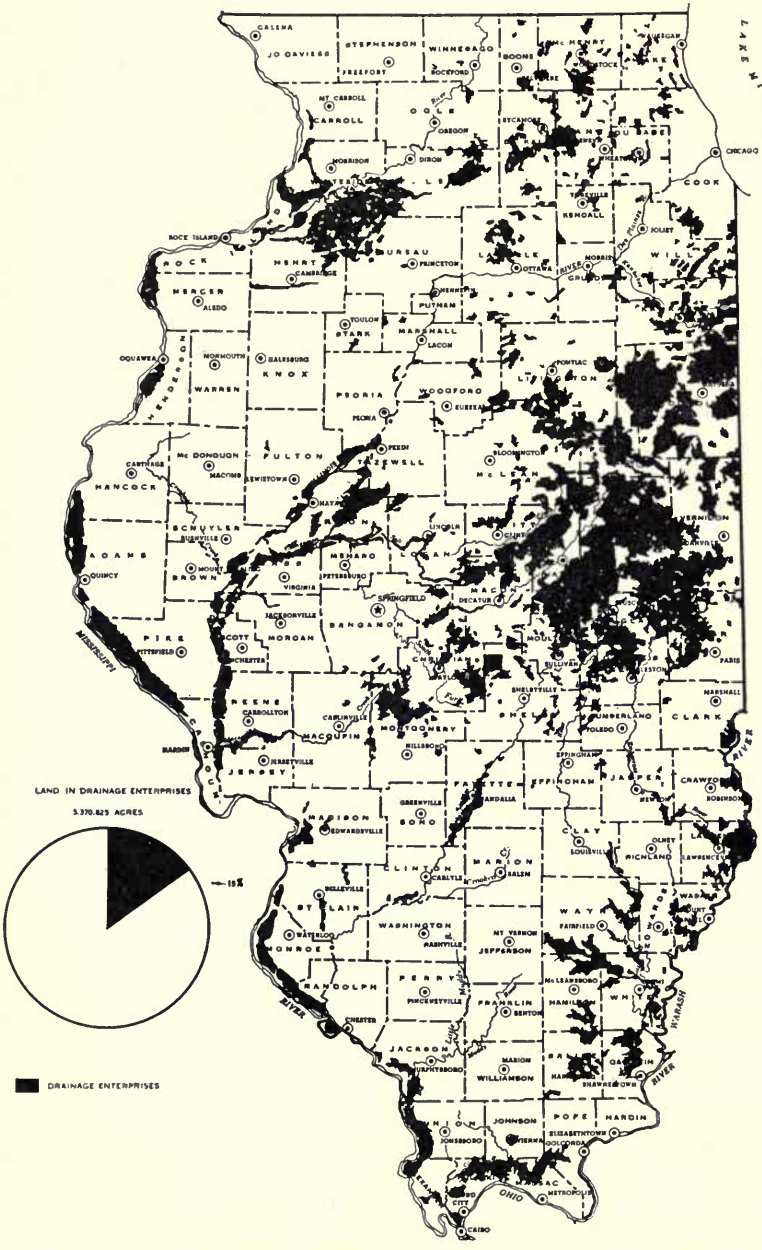
Nevertheless nearly half of the land required additional drainage facilities before it could be made to produce maximum yields. Today one-third of the farms in the state and nearly one-third of the total farmland has been provided with some form of artificial drainage. The major part of this drainage work was done between 1890 and 1915. In 1950, 15 percent of the total land area of the state, or 5,370,825 acres, was included in organized drainage districts (Fig. 2).

Much of the land which has been provided with drainage facilities is at the upper end of the watersheds in east-central Illinois where the land surface is very flat. Drainage of this land is accomplished by open ditches alone or by ditches and tile drains. In the large bottomland areas bordering the rivers, levees and pumping plants are needed for protection from overflow. However a sizeable part of the bottomlands, now in timber, is still unimproved. Since much of this soil which was deposited by streams during flooding is the topsoil from productive areas, many of these bottomlands could be highly productive if properly drained and protected from overflow.

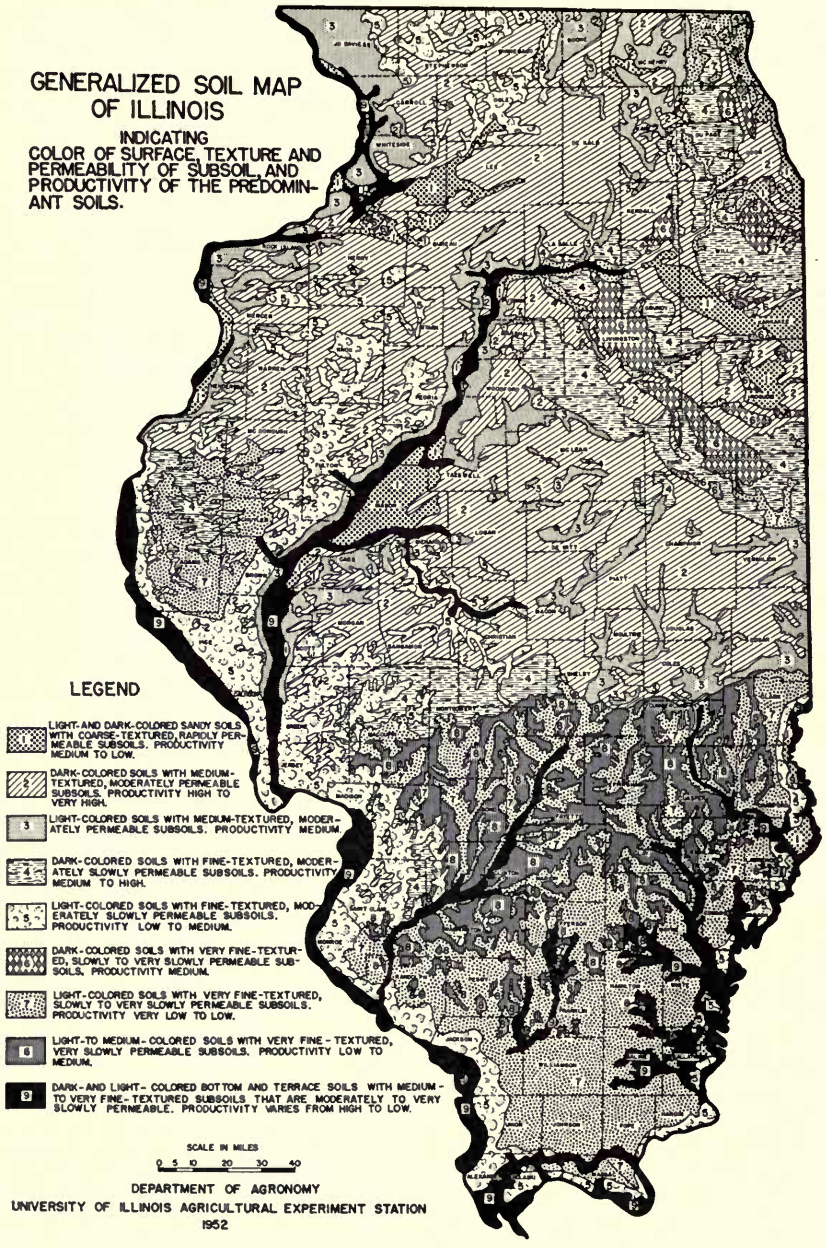
In south-central Illinois (Soil group 8, Fig. 3) where the subsoil on the flat areas is a tight clay which prevents the economical use of tile drains, adequate drainage is a serious problem. The bottomlands of south-central Illinois, unlike those in other parts of the state, are naturally low in fertility. Some of the bottomland soils in parts of the south-central area do not warrant much expense for reclamation.

Soils. Variations in the type and productivity of soils are due to differences in age, in parent material from which the soils were derived, in topography, drainage of the land surface, climate, and organic activity. The use of the land over a long period of time also affects its productivity, and in certain areas where harmful erosion occurs, the effects on the soil may be permanent.

The soils of Illinois have been divided into nine general groups based on the color of the surface, texture and permeability of the subsoil, and the productivity of the predominant soils. The geographic location of these soil groups together with a description of them is shown in Fig. 3. A detailed discussion of each group is not necessary,



In 1950 facilities for artificial drainage (shown on the map by darkened areas) covered 15 percent of the state. They were located mainly in lowlands along the rivers, in the extensive level land of east-central Illinois, and in smaller areas of level land in northern Illinois. (Fig. 2)



The soil types in Illinois, nearly 300 in number, have been combined into nine general groups based upon the color of the surface, the texture and permeability of the subsoil, and the productivity of the soil. (Fig. 3)

but a knowledge of some of the more important differences between groups may help in studying the relation of soils to types of farming.

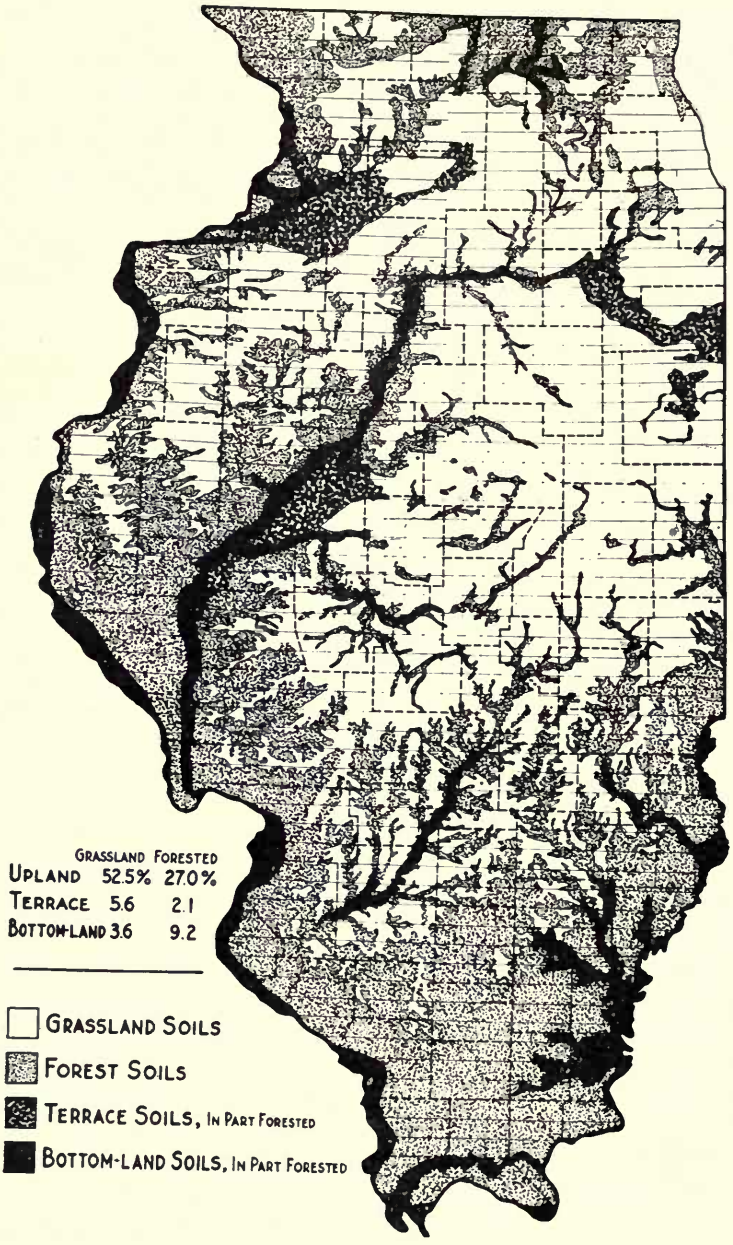
For the purpose of this study, the soils may be divided into three groups: dark-colored soils, light-colored soils, and sandy soils. Dark-colored soils are higher in organic matter and usually are more productive than light-colored soils. Light-colored soils in the northern two-thirds of the state are in general more responsive to treatment and more productive than those in southern Illinois. Sandy soils vary greatly in response to treatment. They also vary in productivity, ranging from moderately high to very low. Their productivity depends largely on the coarseness of the sand and the amount of organic matter present.

The areas of dark soils correspond closely with the original prairie areas in the northern two-thirds of the state, while the light soils represent the original timber areas (Fig. 4). In the southern third of the state all the soils are light-colored except in limited areas of bottomland and upland swamp. Only small areas of sand are found in Illinois.

The dark-colored and young soils are much higher in available nitrogen and phosphorus and require less limestone to correct their acidity than do most of the light-colored and older soils from which leaching has removed much of the natural fertility. Drainage of the dark soils is a comparatively easy task and a highly profitable one, but a tight subsoil beneath the surface of some of the light soils in southern Illinois makes the use of tile impractical. Even where tile is effective, the returns often do not justify the drainage costs unless productivity is improved through wise use of fertilizers. Evaporation is much more rapid from the light soils, and because of the shallow root system which plants develop as a result of the tight subsoil, there is greater damage during periods of drouth.

Rainfall. The average annual rainfall in Illinois is heaviest in the southern part of the state and lightest in the north, varying from 47.43 inches at Anna in Union county to 30.77 inches at Morris in Grundy county (Fig. 5).[1] The rainfall is greatest during the growing season (May through September), amounting to roughly one-half the annual precipitation in the southern area and two-thirds in the northern part. The average for all parts of the state during the growing season is about 20 to 25 inches. Winter rainfall (October through April) is heavier in the southern part of the state.

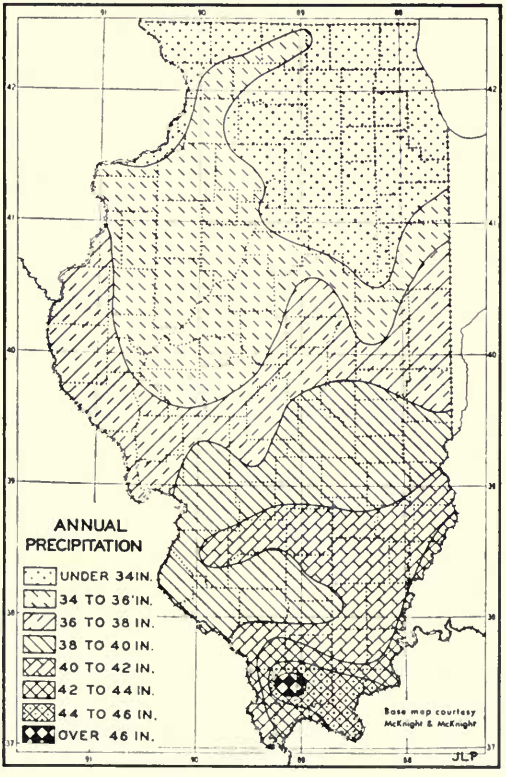
[1] See Illinois Agricultural Experiment Station Bulletin 532 for more detail on rainfall.



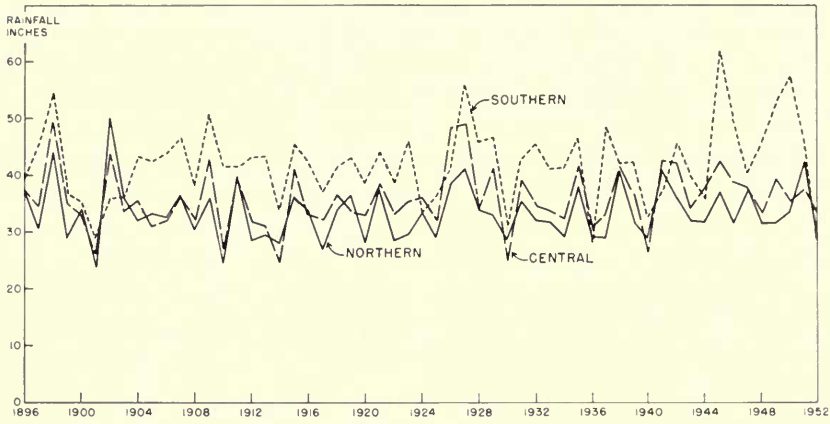
The Illinois grassland or prairie soils are found in the northern two-thirds of the state, while most of the forest or woodland soils are found in southern Illinois or along streams. (Fig. 4)

This amount of rainfall is enough to produce abundant crops if properly distributed over the growing season. However, dry periods of three to six weeks do occur either over the state as a whole or in limited areas. These dry periods cut down crop yields even during years when the total rainfall is sufficient. Light-colored soils are less resistant to drouth because of a lower water-holding capacity and because of the shallow root systems which develop where tight subsoils exist. Some fields in the same community resist drouth better than others because of the way the land has been farmed.

Rainfall is quite dependable from year to year although wet and dry years occur. Fig. 6 shows the annual rainfall for northern, central, and southern Illinois over the 56-year period from 1896 to 1952. The departures from normal are neither frequent nor large.



The average annual precipitation in Illinois decreases from south to north in an irregular but definite pattern. (Fig. 5)



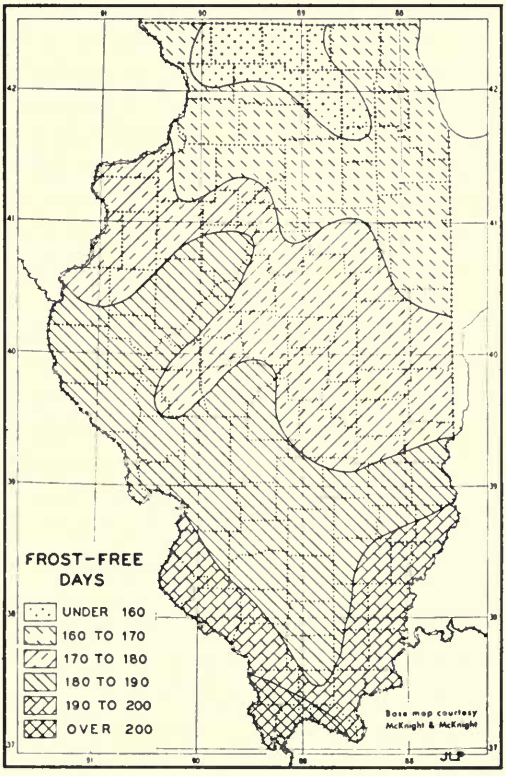
Over the period of years from 1896 to 1952, rainfall in the three areas of Illinois varied from year to year. Wet and dry years occasionally occurred but the rainfall was usually adequate for crop production. (Fig. 6)

Winter precipitation in the form of snow often affects the level of crop production. Water from melting snow sinks into the unfrozen ground with less run-off than does the same amount of rainfall, and, more important, the snow affords protection in winter to such crops as wheat, alfalfa, and clover. The average snowfall in southern Illinois is about 10 inches and in the extreme northern part of the state about 35 inches.

Temperature. The temperature of the air, the relative temperature of the soil, and the length of the growing season (Fig. 7) are important in determining the crops that can be successfully grown in an area.

Over a long period of years there has been a difference of 10 degrees (F.) in average temperatures from the northern to the southern boundaries of Illinois and a difference of four weeks in the average length of the growing season. The greatest difference in temperatures of geographical sections occurs during the winter and spring months. Over a period of 56 years, the average temperature in the northern part of the state was 22.5° F. during the winter months and 72.0° during the summer months. In the extreme southern part of the state, the average temperatures during the same seasons were 38.7° and 77.7°. The average maximum temperature is 98° in the northern area and 99° in the southern, but the average minimum temperature is –14° in the northern area and 5° in the southern.

The temperature of the soil, as well as that of the air, influences the rate of plant growth and biological activities in the soil. Soil temperature differs somewhat from that of the air depending on the following soil conditions: (1) moisture content, (2) color, (3) compactness, (4) vegetative or snow covering, and (5) inclination of the surface to the sun's rays. The dark well-drained soils of central and northern Illinois are warmer than the light soils of southern Illinois where much of the surplus water does not soak into the soil but must evaporate.



The length of the growing season depends on the number of days from the average date of the last freezing temperature (32° F. or colder) in the spring to the average date of the first freezing temperature in the fall. A northwest to southeast trend is noticeable in the lines which divide the state according to the number of frost-free days. (Fig. 7)

ECONOMIC CONDITIONS INFLUENCING TYPES OF FARMING

Topography, climate, and soil limit the kinds of crops that can be successfully grown in an area, and these, in turn, influence the selection of livestock. Economic forces also exert an influence over the selection of crops and livestock enterprises, and they help determine not only the kinds of production but also the relative amounts of each and the way in which they will be marketed.

Over the years as agriculture has developed from a self-sufficing home industry into a highly commercial undertaking, the competition which has arisen between regions has led to more specialized production. The advantage that one area may have over another in producing a single commodity depends upon the cost of production of that commodity and the farm price received for it. As a matter of practice, however, farmers rarely depend upon a single commodity. They grow those combinations of crops and livestock which they believe will return the most value from the available resources. Thus while one area may have a distinct advantage over other areas in the production of a certain commodity, it may have a still greater advantage in the production of a combination of commodities and will therefore concentrate on those that are most profitable when grown together. It is possible to produce several products, none of which is highly profitable in itself but which in combination return a good income. On the other hand an area may be forced into the production of some crops in direct competition with areas that have superior conditions for these crops, because there is no other product that will fit into the farming scheme and return a better income.

Some of the more important economic forces which have helped to shape the pattern of agriculture in a region include size of markets and nearness to them, transportation facilities, supply of capital, availability of labor, types of land tenure, changes in land values, and changes in the size of farms.

Markets. Among the states having the highest proportion of urban dwellers, Illinois ranks seventh. Few agricultural areas in the United States have close at hand such extensive markets for their products as this urban population provides. The population of Illinois has grown from 55,211 in 1820 to 8,712,176 in 1950. Seventy-eight percent of the population lives in cities and towns of 2,500 or more. There are 245 cities and towns with a population of 2,500 or more and 224 with 1,000

to 2,500 inhabitants. The proportion of people living on farms varies from less than 1 percent in Cook county to 59 percent in Jasper county. If the four counties of the Chicago area, in which 58 percent of the total state population lives, are not counted, the population living on farms comprises almost 20 percent of the total population. In the state as a whole, including the Chicago counties, 9 percent of the population lives on farms.

As agriculture passed from the self-sufficing stage, industrial developments in cities not only took over many processes formerly performed on the farm but also provided new markets for agricultural products. Milk condenseries, cheese factories, creameries, vegetable canning and freezing plants, soybean oil mills, feed mills, meat-packing plants, and other industries have created near-at-hand, special markets for farm products. The development of these industries in certain localities was brought about by the type of farming existing in the vicinity, but the presence of these industries has, in turn, stimulated the production of the particular raw products which they use.

The major industrial centers in Illinois have developed mostly because of the wealth of natural resources and marketing facilities. No other part of the United States is better situated with readily available supplies of raw materials plus markets for finished products. It is almost certain, therefore, that Illinois will continue to be one of the few states that enjoy the combined advantages of being an important industrial as well as agricultural area.

Transportation. In addition to supplying local demands, Illinois farmers must look to more distant markets for the sale of their surplus products. The ability to compete with other areas in the sale of products to distant markets is dependent to a large extent upon transportation facilities, and these have been developed in Illinois to the point where they are seldom limiting factors. The extensive railroad system, the hard roads, and truck transportation have put distant markets within reach of the farms. Calhoun county is the only county not crossed by one or more railroads.

The freight-rate system of the Illinois railroads, which favors certain products in certain areas, offers an additional advantage. The part of Illinois which lies north and west of a line drawn from Chicago down the Illinois river to East St. Louis is the Western Classification territory; the part which lies south and east of this line is the Official Classification territory. In the Western Classification territory, freight rates favor livestock being shipped to Chicago or St. Louis; in the

Official Classification territory, rates favor the shipment of grains. But more recently the establishment of grain elevators along the Illinois river from which grains are shipped by water has given these elevators a transportation advantage over those relying upon rail shipment.

Formerly, perishable products, like products of great bulk and weight, could be marketed profitably only if produced near the consuming center. Improved handling under refrigeration and the development of truck transportation have greatly expanded the possibilities of markets for perishable foods. Hard roads have contributed to the development of dairying for the whole-milk market and to the location of creameries in areas which were previously handicapped by poor transportation. Livestock and vegetables are also trucked in large quantities to terminal markets. In some localities truck transportation has changed the organization of farms along the road even though the type of farming in the area as a whole has not changed.

Capital. The large volume of loans made on farm property by insurance companies shows that Illinois has been regarded as a good farm-loaning territory. No doubt the nearness of large population centers is partially responsible for this situation since it assures a stable demand for farm products. The nearby industrial centers also represent a ready source of capital for farming purposes.

Throughout World War II and the postwar period, the capital required to finance farms has risen steadily and has reflected the inflationary trend of prices in general. The more intensive use of land which resulted from the increased demand in World War II has made necessary a greater investment of capital for soil maintenance, construction of buildings, purchase of machinery, and other improvements. The amount of capital which the farm owner has been willing to invest has depended upon the prices which he could receive for certain products. While higher farm incomes have financed much of this improvement, the added expenditures have also called for an increased amount of credit running for terms of three to five years.

Labor. Neither the supply of farm labor nor the kind of labor required limited the early development of types of farming in Illinois. With the outbreak of World War II, however, the usual farm labor supply was diminished by the demands of the armed forces and by the marked increase in industrial activity to support the war effort. The continuation of a high rate of industrial activity with rising wage scales after the war has forced farmers to be largely self-sufficient as

far as labor is concerned. This self-help has been accomplished through the use of more machinery and through exchange work among neighbors. The additional equipment has increased capital requirements. In the future the farm labor supply in a state as heavily industrialized as Illinois will continue to depend upon the degree of industrial activity.

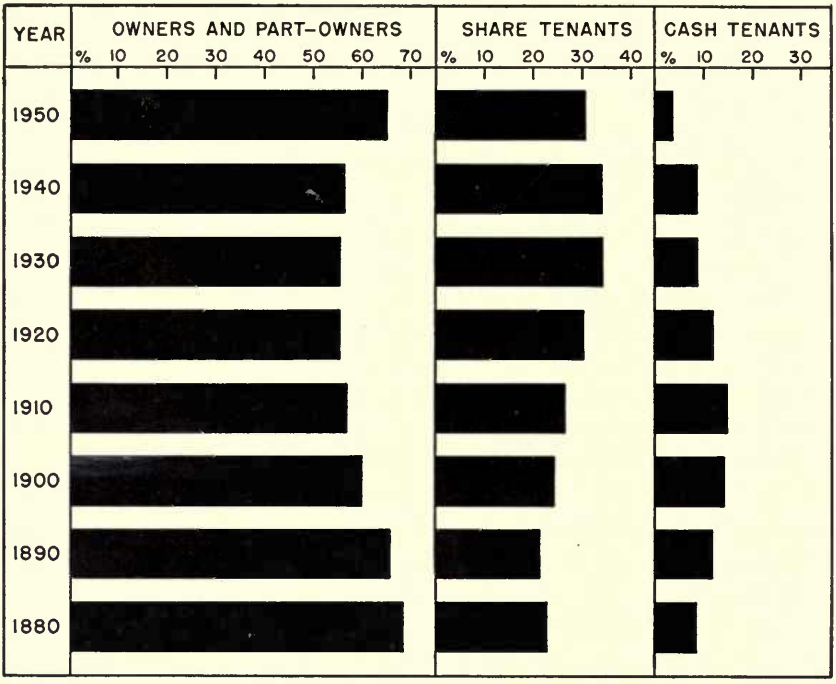
Land tenure. Sixty-five percent of the farms in Illinois in 1950 were classed as owner-operated. Forty-five percent were fully owned and 20 percent were owned in part and rented in part. Tenants operated 35 percent of the farms; and managers, less than one-half of 1 percent. Since both part-owner and rented farms are of larger acreage than full-owner farms, 58 percent of the total farmland was rented. From 1950 to 1954, these tenure groups changed but little. Continuing the trend toward larger operating units, some owners rented additional land.

Some characteristic differences in systems of farming are related to land tenure. It is difficult, however, to say which is cause and which is result. The largest proportion of rented land, for example, is found in areas that are highly productive and that have a high proportion of tillable land. Such land is best suited to the production of grain crops, and grain farming and tenancy work well together. On the other hand, the cause of the present high rate of tenancy in such areas may be the large amount of capital required for farm ownership.

The sale of land in large tracts by the Illinois Central Railroad during the 1850's seems to have been the beginning of tenancy on a major scale in Illinois. Some of the large tracts were operated as single units for many years, but many more were immediately broken up into smaller units and leased on shares. Before 1880 when census data on ownership first became available, land could be bought for low prices and most farms were owner-operated. Only 31 percent of the farms were operated by tenants.

The increase in the amount of tenancy between 1880 and 1920 was due to several causes: (1) the steady increase in the value of land made it possible for many farmers to retire and lease their land; (2) many farms were purchased by businessmen as permanent investments and leased; (3) with the prospective advance in land values, many speculators, particularly in 1918 and 1919, bought farms and leased them with the intention of selling as soon as a profit could be realized; and (4) the rapidly rising value of farmland acted as a growing barrier to ownership for many with limited capital.

From 1920, when land values reached a peak, to World War II, there was little change in the amount of tenancy in Illinois. From 1940



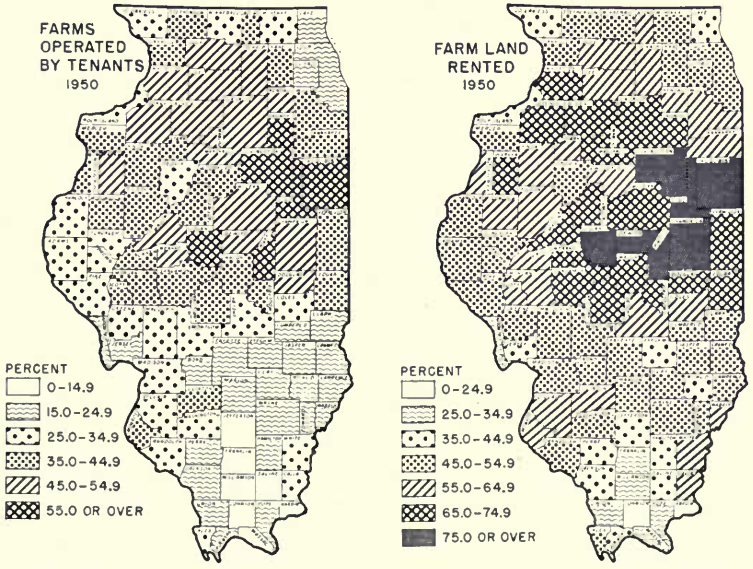
The percent of farmland operated by cash tenants has declined steadily since 1910; the percent operated by share tenants declined from 1940 to 1950. In 1950 a higher proportion of the land was owned by the operators than in 1930, while the percent of land rented by owners remained constant. (Fig. 8)

to 1950, tenants renting all the land they operated decreased from 43 percent to 35 percent (Fig. 8). Increased production per worker resulting from mechanized equipment led to larger operating units; increased earning enabled good tenants to acquire more labor-saving equipment and secure control of more acres.

Today the amount of land rented is greatest in the east-central and northern parts of the state where large farms, highly productive soil, and equipment requirements call for large investments per farm (Fig. 9). More than 75 percent of the farmland in seven counties in east-central Illinois was rented in 1950. In many communities from 25 to 35 percent of the tenants are related to the landowners. Thus tenancy frequently denotes a stage in passing land from one generation to the next.

Types of tenancy agreements. Cash tenancy was common on Illinois farms about 1910; since then it has declined. Now it is found mostly on dairy farms in the northern two tiers of counties and adjacent to the larger cities, especially Chicago, Rock Island, and East St. Louis. Under a cash system of tenancy, the landowner has a constant but lower income and the operator has greater freedom in the management of the farm and receives the full benefit of his own initiative. It is significant that the proportion of cash-rented farms declined from 9 percent of all farms in 1940 to 4 percent in 1950 (Fig. 8) and that the decline continued through 1954.

Cash tenancy is found more often on dairy farms than on grain farms for two reasons. Labor is a more important factor in dairying than in grain farming, and cash tenure enables the operator to use available labor to the fullest extent without dividing the proceeds with the landowner. Also, unless the operator is a superior farmer, greater risk is involved in dairy production than in grain farming, and therefore the landlord is frequently unwilling to supply the additional capital necessary for the dairy enterprise.



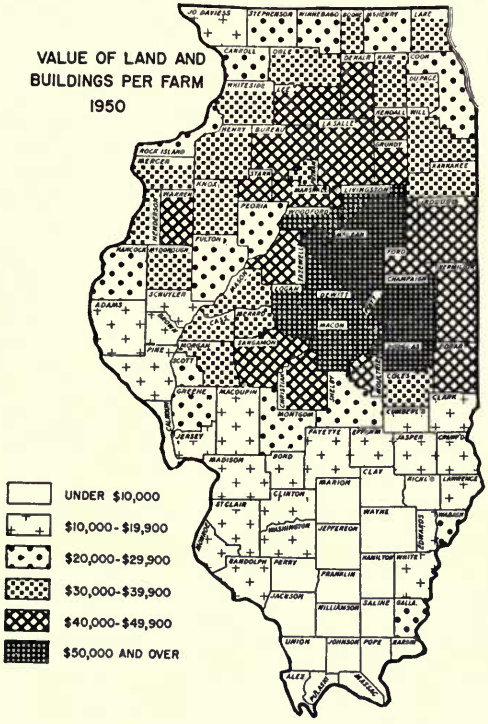
On the basis of the percentage of farms operated by tenants (left), the largest percentage of tenant farms is found in the east-central part of the state. The percentage of farmland rented (right) gives a more accurate picture of tenancy, however, because tenant farms are larger than those operated by owners, and part-owners also rent land. (Fig. 9)

In grain farming, cash tenancy encourages extractive methods. For this reason the common arrangement is the use of crop-share-cash leases which provide that the tenant pay a share of the grain crops as rent for the cropland and a cash rental for pasture and hay land. This arrangement has an advantage in that the main part of the rental is based upon the grain crop and both tenant and landlord share in the uncertainties of production. However, it tends to discourage livestock production since the landlord's share of grain is usually sold from the farm. The livestock-share lease, under which the landlord maintains a part interest in the livestock, is becoming more generally used in Illinois as the need for greater effort to maintain and improve the soil becomes apparent.

Changes in land values. The development of agriculture in Illinois has been accompanied by a rapid rise in land values. The term "land values" as it is used in this section includes not only the value of the land itself but also the value of the farm buildings located on the land. In 1850 the 12,037,000 acres of land in farms was valued, with improvements, at an average of $8 an acre. In 1880 the value had advanced to $32 an acre, and in 1900 to $54. This advance in price continued until 1920 when farmland and improvements were valued at $188 an average acre. Within the next decade, prices of farm products dropped and land values declined; in 1930 the average value of land and improvements was $109 an acre. The low point was reached in 1933, after which a gradual improvement took place. With the coming of World War II, land values mounted steadily. Land was valued at $174 an average acre in 1950; and at $228 an acre in 1954. The average value of land in 1880 was $3,984 per farm; in 1920 it increased to $25,289; in 1930 it dropped to $15,553; in 1950 it rose again to $28,357; and in 1954, to $40,871. The recent changes in average value per farm reflect the reduction in the number of small farms and the higher value per acre. (Fig. 10 shows the value of land and buildings per farm in 1950.)

Land values have remained lowest in southern Illinois where the soil is naturally of low productivity and large areas can be used only for pasture or timber. With the exception of the Chicago area, where land speculation still plays an important part in determining land values, the highest values have developed in the east-central part of the state (Fig. 11). The relation of land values to soil conditions can be seen by comparing Fig. 11 with Fig. 3.

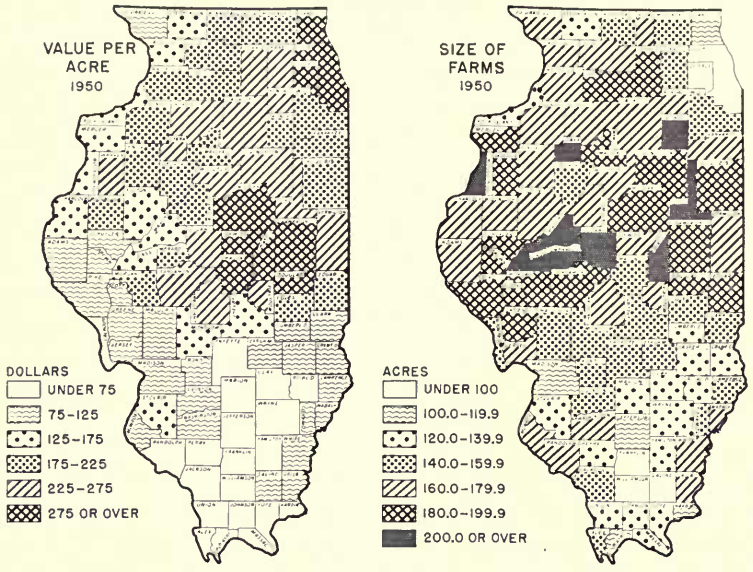
Changes in the sizes of farms. Another significant trend in Illinois agriculture is seen in the changes that have taken place in the size of



East-central and north-central farms have the highest values of farmland and buildings per farm because of large acreages and high value per acre. Values were computed for commercial farms only. (Fig. 10)

farms. During the period from 1850 to 1880 the average farm shrank from 158 acres to 124 acres. This change can be attributed, in part, to the fact that large tracts of land granted to the Illinois Central Railroad were eventually divided and sold in small tracts for farming purposes. Within this thirty-year period, the number of farms increased nearly three and one-half times, while the acreage in farms increased only two and one-half times. From 1880 to 1900 there was little change either in the number or in the size of farms.

From 1900 to 1950, however, the trend toward smaller farms reversed; the average farm size increased from 124 acres to 159 acres or 28 percent. From 1950 to 1954 the average size increased to 173 acres or 11 percent. Although in 1950 the farms in three southern counties and in two counties in the Chicago area averaged less than 100 acres, in nine counties in the central part of the state, they averaged more than 200 acres (Fig. 11). The total number of farms



Acre values are highest in east-central Illinois and in counties next to Chicago. Farms are largest in the central part of the state where land values are relatively high and natural conditions are favorable to extensive farming. (Fig. 11)

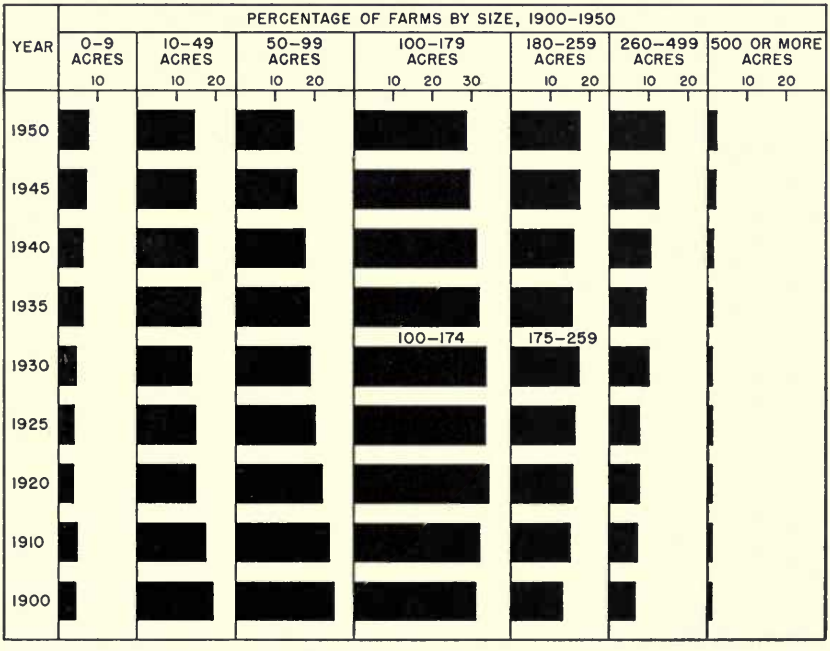
decreased 26 percent from 1900 to 1950 and the acreage in farmland 5 percent. By 1954 a further decline of 10 percent occurred in the number of farms and 2 percent in the acreage of farmland.

The changes from 1900 to 1950 were more pronounced in some size-groups (Fig. 12) than in others. Farms under 10 acres increased in number, the greatest concentrations of these being in areas next to large cities and in southern Illinois where coal and oil industries furnished off-farm employment. With the exception of the 10-acre group, the number of farms in all size-groups under 180 acres declined. Nevertheless the 100-179 group still contained the largest number of farms and included 29 percent of all farms. The 180-259 group, which represented 18 percent of all the farms, held its own in numbers and increased its percentage rating. The larger size-groups, 260 acres or more, increased both in number and percentage. These groups represented only 16 percent of the farms but included 40 percent of the farm acreage (Fig. 12). Between 1950 and 1954 the number of farms declined in each size-group below 220 acres, but increased in each size-group above 220 acres. Seventy-two percent of the reduction in numbers of farms occurred in size-groups below 100 acres. Continued

mechanization of farms and opportunities for off-farm employment encouraged the trend toward larger acreages.

In Illinois, 1,082 farms were classified in 1950 as "large farms." A "large farm" is one which complies with any of the five following conditions: (a) 1,000 acres or more of land; (b) 750 acres or more of cropland; (c) 200 or more cattle of all ages; (d) 500 or more sheep of all ages; or (e) $70,000 or more in value of farm products sold or to be sold. These large farms were classified on the basis of their major products as follows:

Livestock farms other than dairy and poultry	626
Field-crop farms other than vegetable and fruit and nut	274
General farms	26
Dairy farms	16
Vegetable farms	16
Poultry farms	10
Fruit and nut farms	9
Miscellaneous and unclassified farms	105
Total	1,082



Except for farms of less than ten acres, the proportion of farms in all size groups under 180 acres declined during the period from 1900 to 1950, while the proportion of larger farms increased. (Fig. 12)

The changes that have taken place in the size of farms have been due, in part, to the combining of farms in order to make it possible to use larger implements and power units with greater economy.

OTHER CONDITIONS AFFECTING TYPES OF FARMING

Technical and scientific developments. The rapid advance of scientific knowledge in all branches of agriculture has significantly changed the pattern of operation and the results secured on Illinois farms. These changes are most evident in the treatment of soils, the production of crops and livestock, the marketing of farm products, and the power and machinery units employed in farm operation.

A broad program of soil testing has provided a basis for fertilization geared to the soil deficiencies and crop requirements, and the development of conservation measures protects areas of sloping soils from the harmful effects of erosion.

In crop production the major development has been in hybrid corn, now grown throughout the state. Its use has increased corn yields in Illinois by an estimated 15 bushels per acre. New varieties of soybeans, oats, wheat, and vegetable crops account for higher yields and greater resistance to crop diseases. New chemical sprays have come into use to protect both growing and stored crops and to combat the competition of weeds.

In livestock production improved breeding programs have been accelerated through artificial insemination. Balanced rations, hormones, and antibiotics are increasing the production of meat and livestock products per unit of feed, while sanitation and drugs are controlling losses from diseases and parasites.

The marketing branch of farming has been greatly improved through the establishment of standards for a wide variety of products, the increased marketing on a graded basis, the handling of products through cooperatives under farmer control, the broadening of the market through the development of new uses for products, and the greater availability of specialized transportation facilities.

Increasing use of mechanical power and machinery is reducing the hours of human labor. To grow and harvest an acre of corn on highly productive land in central Illinois in 1932 required 11.6 hours of labor; in 1951, 6.3 hours were required. Equipment is available for all kinds of crop operations, ground preparation, fertilizing, seeding, cultivating, and harvesting. Mechanical equipment is being introduced more and

more into livestock operations, particularly in the heavy-labor jobs of feed preparation and distribution and the cleaning of barns and lots.

The results of these and many other technical developments cannot be measured separately. Together they have wrought marked changes in agriculture through increased production, greater timeliness of operations, lower labor requirements, and lower cost per unit of product. They have also increased the cash costs of farm operation, made necessary a greater capital investment, and created a greater interdependence between agriculture and other industries.

Legislation. Before 1930, restrictions upon the importations of agricultural products were the chief forms of legislation influencing the development of farming in Illinois.

Tariffs on soybeans and wool were among the more important measures. The tariff on soybeans protected the industry from competition with soybeans grown in eastern Asia. This protection was especially important during the experimental period when varieties were being improved and farmers were trying to determine the best methods of handling the crop. A tariff was placed on wool to encourage sheep production in the United States where sheep-raising is a minor industry. The more recent price supports on wool were designed to serve the same purpose.

Restrictions placed by other countries on our exportations were of as much importance to Illinois farmers as our tariffs. Under the provisions of the Reciprocal Trade Agreements of 1934 and of later acts similar in nature, restrictions between the United States and specified countries were relaxed. After World War II, rehabilitation of the devastated countries provided outlets for vast quantities of farm products. The second International Wheat Agreement concluded in 1953 was an effort to guarantee to the United States a portion of the foreign demand for wheat.

A host of legislative measures have regulated the domestic economy. During the depression period of the thirties, acreage allotments of major crops were introduced; later a government-supported storage program was instituted. During World War II, subsidies were used to stimulate production in order to meet the needs of the nation and its allies.

It is difficult to appraise the net effect of all these measures and especially difficult to trace their influence in the agriculture of a single state. At times they have encouraged needed production; at other times they have stimulated production beyond the need and have created serious problems of surplus products. Sometimes legislative measures

have served to price the United States out of world markets and to encourage the production of substitute products. In general, the efforts to expand production have been more successful than those intended to limit it.

Influence of custom and training. The customs and training of the people settling in different sections of Illinois have influenced the types of farming in areas where there is considerable choice. A good example is found in Stephenson and Jo Daviess counties, which were settled by many people from New York state, the Scandinavian countries, and Switzerland. The dairy industry, particularly cheese production, was developed in these counties not only because the industry was better adapted to that area than grain farming but also because of the training and knowledge of these early settlers. The introduction of cotton in southern Illinois was due in part to the presence of some Negro farmers who, because of their experience in growing the crop farther south, undertook its production in Illinois.

Unfortunately personal preferences have sometimes influenced farmers to continue a certain type of farming rather than adopt some other type for which natural conditions were more favorable. As the agriculture of the country becomes older, however, and as technical information becomes more available through high schools, colleges, and extension activities, farm practices tend to become better adapted to local conditions.

AREAS IN ILLINOIS WITH DIFFERENT TYPES OF FARMING

Use of land in Illinois. According to the 1950 Census, 86.5 percent (30,987,000 acres) of the total land in Illinois was classed as farmland. The remaining 13.5 percent (4,820,000 acres) was occupied by cities, railroads, roads, and public institutions; or was used for industrial purposes and recreation; or was too rough and unproductive to be used for farming.

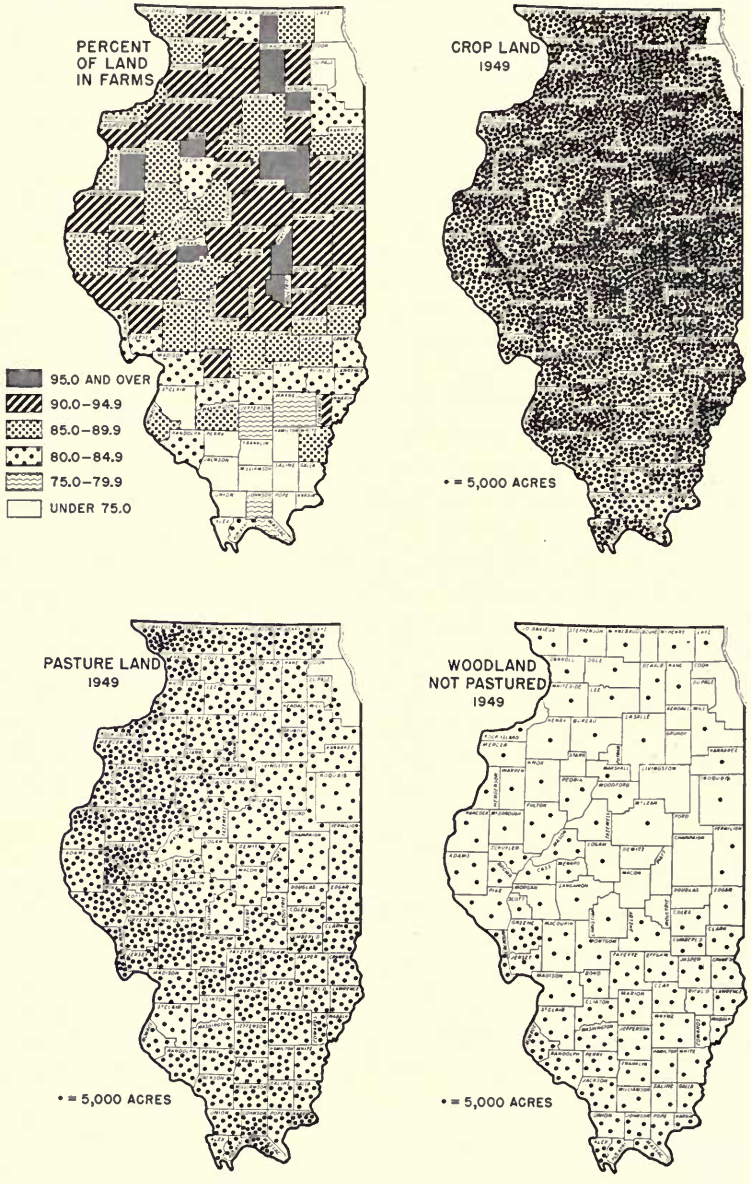
In 1950 in Piatt county, where the soil is highly productive, where 95 percent of the land is tillable, and where there are no large cities and only a small amount of manufacturing, 96 percent of the total land area consisted of farms. In Cook county, only 33 percent of the land was used as farmland. In 12 southern counties, where much of the land is rough and low in productivity, less than 75 percent was classed as farmland.

Of all Illinois land in farms in 1949, 77 percent (23,943,000 acres) was classed as cropland including tillable pasture; 7 percent was classed as pastureland that could not be cultivated; 7 percent as woodland pastured; 3 percent as unpastured woodland; and 6 percent as "other land" such as wasteland, building lots, and roadways. The proportion of farmland classed as cropland varied from 48 percent in Calhoun county to 95 percent in Piatt county. The total cropland (Fig. 13) included 987,000 acres of idle (fallow) land or crop-failure land (land on which crops were planted but not harvested). Most of the crop-failure land was in the southern one-fourth of the state.

Fifteen percent of the farmland of the state (4,856,000 acres) was used only for pasture in 1949 and 7 percent was woodland pastured. The proportion of land used for pasture varied from 7 percent in Douglas county to 49 percent in Jo Daviess county, where 36 percent was for pasture only and 13 percent was woodland pastured. (Fig. 13 shows the number of acres in pastureland.) In the unglaciated sections of the state and along the rivers and streams, most of the land used for pasture cannot be cultivated. Some of this land has timber growing on it, and the rest is too rough for cultivation. Twenty-nine percent of the total pastureland is pastured woodland, which has a low value as pasture. On many farms in east-central Illinois there is no untillable land although some land is devoted to pasture. The carrying capacity of pastureland varies greatly but is usually much higher in the central and northern parts of the state than in the southern part. Some farmers have undertaken the improvement of permanent pastureland through fertilization and the use of better forage crops, but much still remains to be done.

The farm area of Illinois includes 1,009,000 acres of timber not used for pasture (Fig. 13) and 1,720,000 acres of "other land." Most of the land used for timber only is rough or less productive land. In recent years, more attention has been given to protecting the better timberland from grazing. Considerable land formerly classed as pastureland is now listed as timberland. "Other land" amounts to less than nine acres per average farm.

Illinois in the United States farming regions. Illinois falls in three of the nine major farming regions of the United States (Fig. 14). (1) The dairy region which covers the northern states and extends from the Atlantic Coast to the western border of Minnesota includes a few Illinois counties near Chicago. (2) The feed-grain and livestock region, commonly known as the corn belt, is a large area, roughly

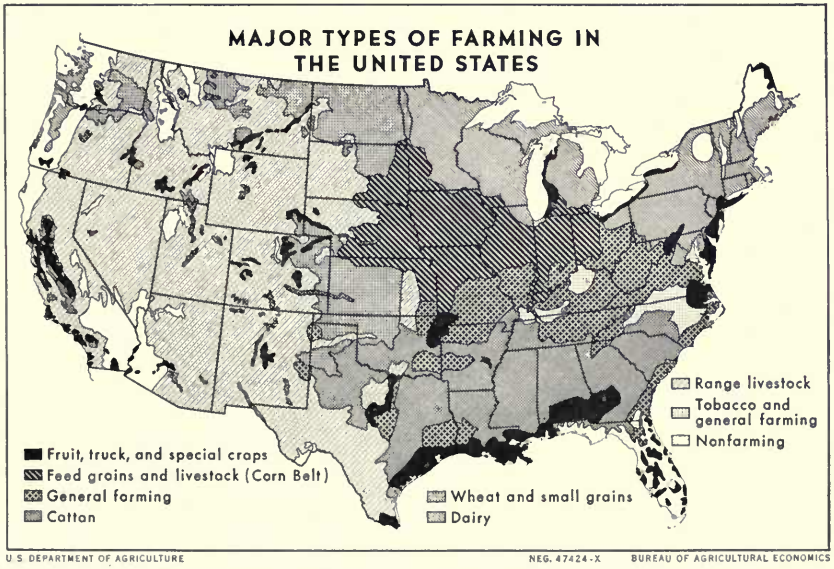


Illinois has a high percentage of its land in farms, and much of that land is suitable for crops. As a part of the rotation system of cropping, some cropland is used for pasture. Land that can be used for pasture only is most abundant in areas with a rough land surface. Unpastured woodland is found in limited areas. (Fig. 13)

triangular in shape, which extends from central Ohio westward to the northeastern corner of South Dakota on the north and to central Nebraska and eastern Kansas on the south. This area embraces central and northern Illinois and a narrow river bottom area in southeastern Illinois, in all, about two-thirds of the state. (3) The remainder of the state which includes about one-fourth of its area falls in the general farming region extending from the Atlantic Coast westward to eastern Kansas and Oklahoma. This region lies along the southern border of the corn belt and north of the cotton belt.

Market conditions in the Chicago area are primarily responsible for the concentrated dairy area of northern Illinois. The demand for milk gives this area distinctive features. Within it are found grain farms, livestock farms, general farms, and limited areas of intensive truck farming, but dairy production is dominant.

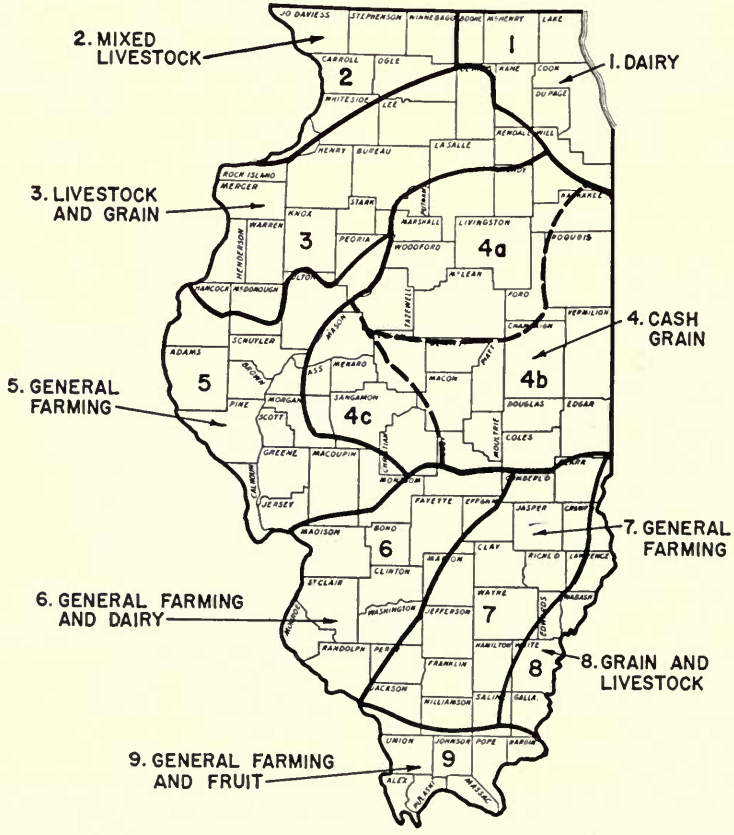
The fortunate combination of climatic conditions, fertile soils, and the demand for feed grains determine the nature of the corn belt area in Illinois. Within this area, soil conditions are dominantly good. Although considerable rolling and broken land occurs in northwestern



Of the nine major farming regions recognized in the United States, three include parts of Illinois. These are the dairy region, the feed grains and livestock region often called the corn belt, and the general farming region. (Fig. 14)

Illinois and next to the Illinois and Mississippi rivers, highly productive land is found on the same farms or in the same community and therefore feed grains are readily available throughout the region. A large proportion of the feed grains is sold to the eastern and southeastern sections of the United States where the demand for feed grains is high. Even so, considerable livestock production is carried on in the corn belt itself.

Within the general farming region of Illinois, the soils are older and less productive than in the corn belt. Parts of the area, while level, have impervious subsoils which interfere with drainage and cause low resistance to drouth. Other parts are quite rolling and subject to severe



Illinois may be divided into nine farming-type areas. These areas differ in their natural conditions, the kind and proportions of their products, and the manner in which their products are used or sold. (Fig. 15)

erosion; in some places, much of the topsoil has already eroded. Wide variation in the value of the soils also occurs because of differences in the depth of loess. Along the western part of Illinois, the loess covering is deep, but it gradually thins out toward the eastern part.

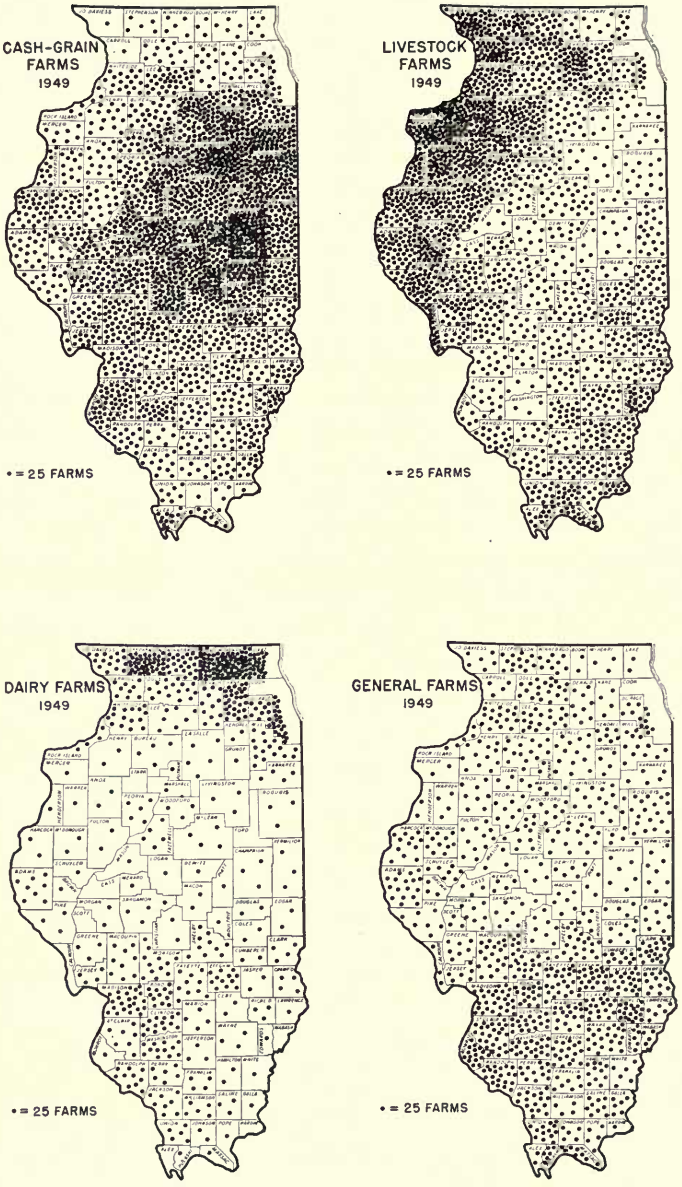
Farmers in southern Illinois find it desirable to produce several commodities as insurance against unfavorable climatic conditions and market demands. The nearness of St. Louis with its large population is responsible for the heavy milk production in counties near that city.

Nine farming-type areas in Illinois. When attention is given to the variations within each of the three major United States regions which extend across Illinois, the state may be further divided into nine farming-type areas. These areas differ in their natural conditions, the kinds and proportions of their products, and the manner in which their products are sold and used (Fig. 15). The areas are not drawn with reference to county lines, but are determined by township and other data, such as those showing soil characteristics. Area 4 includes three minor areas which differ sharply from each other in the proportion of secondary crops grown.

The general position of each area and the dominant type of farming[1] in each are:

1. Northeastern, dairy area.
2. Northwestern, mixed livestock area.
3. Western, livestock and grain area.
4. East-central, cash-grain area:
   (a) Corn and oats.
   (b) Corn and soybeans.
   (c) Corn, soybeans, and wheat.
5. West-central, general farming area.
6. Southwestern, general farming and dairy area.
7. South-central, general farming area.
8. Southeast, grain and livestock area.
9. Southern, general farming and fruit area.

[1] Ten types of farms were recognized by the United States Census of 1950, classification being based on source of income in 1949, namely: cash grain, livestock other than dairy and poultry, general, dairy, poultry, vegetable, fruit and nut, cotton, other field crops, and miscellaneous and unclassified farms. For a farm to be classed in any group except the last, it was necessary that it derive 50 percent or more of its total income from sales of the specified product or group of products. "Miscellaneous and unclassified farms" included part-time, abnormal, and residential farms which were not classified, as well as others which did not fit into any other group.



A farm was classified as cash-grain, livestock, dairy, or general if the product or group of products designated accounted for 50 percent or more of the value of all products sold. These four types included 96 percent of the commercial farms in the state. (Fig. 16)

The distribution in 1949 of the cash-grain, the livestock, the dairy, and the general farms is shown in Fig. 16. The only significant change in types of farms from 1950 to 1954 occurred in grain farms which showed an increase of 9 percent. This change resulted in large part from changes in the relative prices of grains and livestock and livestock products.

While a dominant type of farm can be recognized in each area, there are a number of farms that are not of the dominant type. This does not mean that the off-type farms are not organized to the best advantage; it may mean that their soil and topography are different, or it may mean that the operator prefers an off-type organization for personal reasons. The dominant type of farming, however, represents the conclusions of the greatest number of farmers as to the type of production that is best adapted to the area (Figs. 17 and 18).

Area 1: Northeastern, Dairy Area

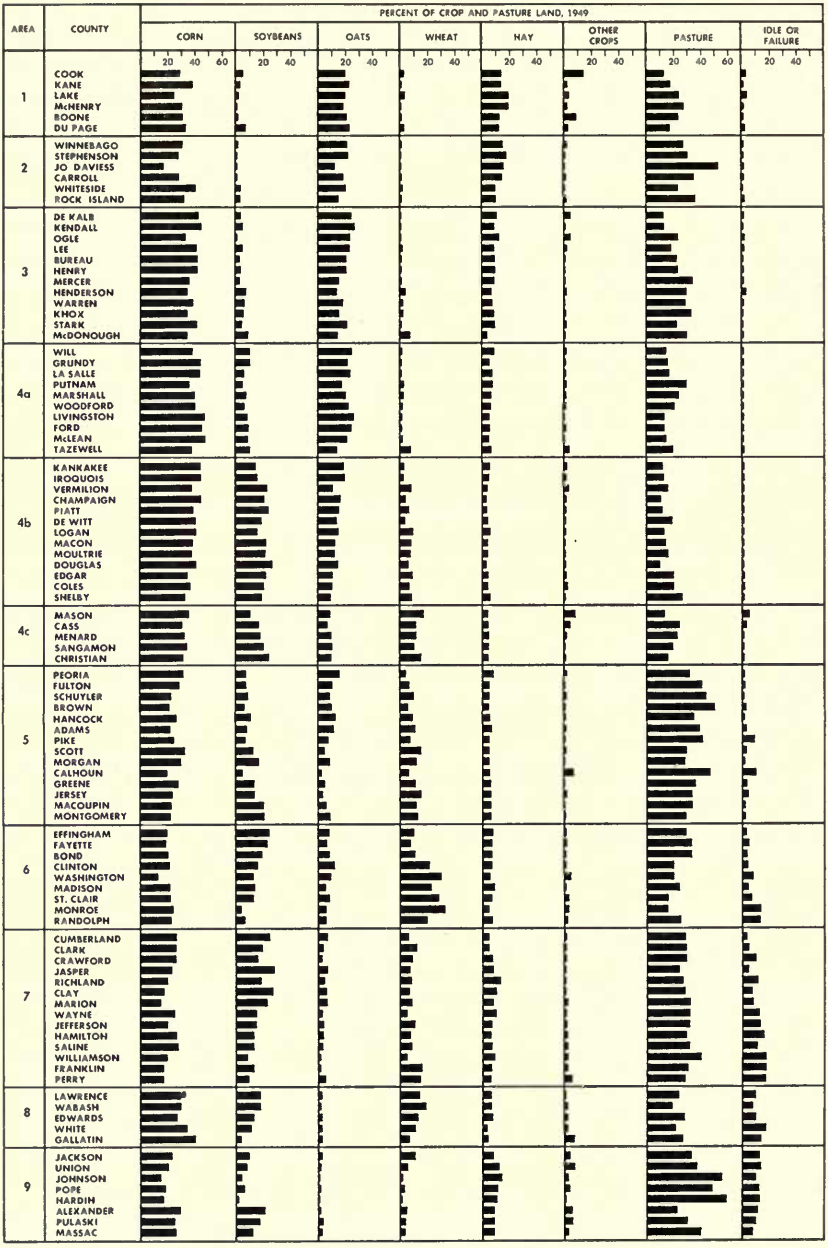
Types of farms. Dairy farms predominate in Area 1 in the northeastern part of Illinois, and in 1950 they included half of all commercial farms in the area (Table 1). The remainder of the farms were of many types, livestock farms making up 18 percent; cash-grain farms, 12 percent; vegetable farms, 8 percent; general farms, 7 percent; and poultry farms, 5 percent.

In 1949 sales of livestock accounted for 35 percent of the total sales. A considerable part of this income was from the sales of cows and calves from the dairy herds. Dairy products provided 29 percent of receipts from sales; horticultural specialties (shrubs, flowers, plants),

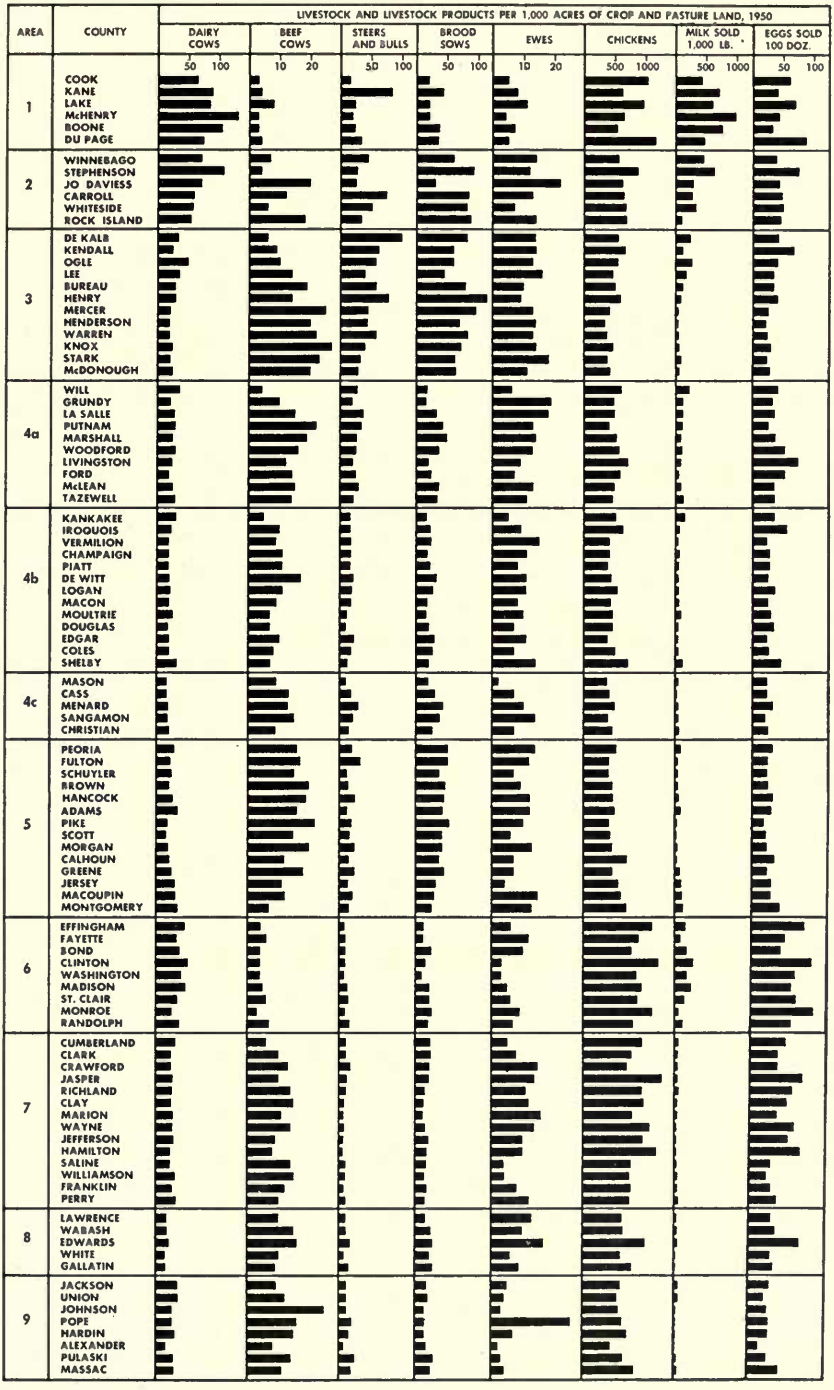
Table 1. — Number of Farms of Specified Types in Each County in Area 1, 1950[a]

County	Cash grain	Dairy	Livestock	General	Vegetable	Poultry	Other[b]	Miscellaneous[c]	Total
Cook	318	548	284	166	534	119	19	1,248	3,236
Kane	216	741	527	96	36	49	5	382	2,052
Lake	121	521	173	52	23	79	5	663	1,637
McHenry	129	1,573	210	85	14	48	10	356	2,425
Boone	67	711	178	61	5	..	..	63	1,085
DuPage	168	257	228	130	42	100	4	499	1,428
Total	1,019	4,351	1,600	590	654	395	43	3,211	11,863
Percent of commercial farms[d]	11.8	50.3	18.5	6.8	7.5	4.6	.5	....	.....

[a] United States Census.
[b] Includes fruit and nut farms, and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 27 percent of total farms.
[d] Total number of commercial farms, 8,652.



Production of the various crops and the percentage of land pastured varied from county to county as well as from one type-of-farming area to another. (Fig. 17)



Production of livestock and livestock products also varied from county to county and from one area to another. On this chart, different scales are used for the different classes of livestock. (Fig. 18)

Table 2. — Percent of Cropland and Pastureland in Specified Crops, Area 1, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Cook	29	5	20	2	14	14	13	3
Kane	38	3	23	1	14	2	18	1
Lake	25	2	20	3	19	3	24	4
McHenry	30	1	18	(b)	19	3	28	1
Boone	31	1	21	(b)	13	9	24	1
DuPage	34	7	23	3	12	2	17	2

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

14 percent; field crops, 12 percent; vegetables and poultry, each 5 percent.

While the number of farms growing vegetables and horticultural specialties is limited, they represent the most intensive farming in Illinois. Most of them in Area 1 are located in Cook county. They grow crops of high value per acre, and use large amounts of fertilizer and labor.

Crops grown. Although nearly one-eighth of the commercial farms in Area 1 are classified as cash-grain farms, the greatest part of the crops grown is fed to livestock. Corn occupies roughly 30 percent of the crop and pastureland, and oats about 20 percent (Table 2). Hay is third in rank, occupying about 15 percent of the available area. Other harvested crops are of minor importance, except for the vegetables and horticultural specialties in Cook county. Pasture acreage, which is important in an area where dairy and livestock farms make up more than two-thirds of the total, is about equal to that of oats.

Livestock and livestock products. Dairy cows make up the major class of livestock in the area, being most heavily concentrated in Mc-

Table 3. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 1, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Cook	66	3	15	20	5	1,027	426	6	6,138
Kane	90	4	83	43	8	617	705	2	4,081
Lake	86	8	23	21	11	964	607	6	6,945
McHenry	131	3	18	22	4	645	975	2	4,247
Boone	105	3	22	37	7	536	764	2	3,187
DuPage	74	4	33	35	5	1,168	471	13	8,692

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

Henry and Boone counties (Table 3). Most of the milk is marketed as whole milk, though some from areas close to Chicago is sold as cream. Few beef cows are kept; some beef cattle are fed, but the numbers are quite limited except in a few townships in the southern part of Kane county.

Hogs and poultry are important supplementary enterprises throughout most of the area. In addition to ordinary farm flocks, large specialized poultry farms account for heavy egg production in the counties near Chicago.

Farm tenure. In Area 1, 29 percent of the farms were rented in 1950. Of these almost one-half were rented for cash, and nearly one-third were livestock-share leases. Both the proportion of rented farms and the proportion rented for cash have decreased in recent years.

Factors influencing development. This part of the state has the soil and the topography, the annual rainfall, temperature range, and length of growing season which make possible a wide variety of crops. These conditions also favor the production of livestock and livestock products. Where such a wide range of choice is possible, the type of production is highly influenced by market outlets. The Chicago metropolitan area, including the city of Chicago and its suburbs as well as smaller cities, represents an urban population of more than four and one-half million. This large population creates a demand for fluid milk, fresh vegetables, flowers and plants, and eggs — products which can be produced best near the center of consumption. The crops demanded are primarily feed crops needed on dairy and livestock farms. Even on cash-grain farms, crop production follows the pattern of the feed demands of the area.

Area 2: Northwestern, Mixed Livestock Area

Types of farms. Farming in Area 2 in northwestern Illinois is best described as the mixed livestock type. Fifty-two percent of the commercial farms were classed as livestock farms on which beef cattle, hogs, or sheep were the major sources of income. Dairy products provided more than half of the income on another 25 percent of the farms.

The relative importance of these different classes of livestock varies widely from farm to farm. Twelve percent of the farms were classed in 1950 as general farms with no one source of income amounting to as much as 50 percent. Eight percent of the farms, most of which were located on the bottomlands along the rivers, were classed as cash-grain farms (Table 4).

Table 4. — Number of Farms of Specified Types in Each County in Area 2, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Vege-table	Poultry	Other[b]	Miscel-laneous[c]	Total
Winnebago.....	136	584	569	223	15	70	15	394	2,006
Stephenson.....	116	1,065	837	325	15	19	5	161	2,543
Jo Daviess.....	27	406	1,141	162	..	18	..	201	1,955
Carroll.....	29	225	1,052	105	7	7	..	120	1,545
Whiteside.....	454	372	1,126	401	10	19	15	194	2,591
Rock Island....	149	99	948	118	31	27	18	355	1,745
Total.....	911	2,751	5,673	1,334	78	160	53	1,425	12,385
Percent of commercial farms[d]	8.3	25.1	51.7	12.2	.7	1.5	.5	....	.....

[a] United States Census.
[b] Includes fruit and nut farms, and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 11.5 percent of total farms.
[d] Total number of commercial farms, 10,960.

In 1949 receipts from sales of livestock other than poultry represented 61 percent of the income; dairy products, 20 percent; all crops, 14 percent; and poultry, 5 percent.

Crops grown. As in Area 1, the main crops grown are corn, oats, and hay (Table 5). Crop production is less intensive in Area 2, however, and varies more from county to county, because of wide variations in soils and topography (Figs. 1 and 3). The soils range from dark, highly productive soils to sandy soils of rather low productivity. The area includes many acres of rolling land, part of which is suited only for pasture. Much of the tillable land is subject to serious erosion unless protected with cover crops. These conditions limit the amount of land that can be put in tilled crops and increase the pasture areas. Most of the grain produced in the area is fed locally and additional feed is purchased by many farmers.

Table 5. — Percent of Cropland and Pastureland in Specified Crops, Area 2, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Winnebago.....	31	1	21	1	15	3	27	1
Stephenson.....	28	(b)	22	(b)	17	1	31	1
Jo Daviess.....	17	(b)	13	(b)	16	(b)	53	1
Carroll.....	28	(b)	19	(b)	15	2	35	1
Whiteside.....	41	4	20	2	9	(b)	23	1
Rock Island.....	33	3	15	1	9	1	36	2

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

Table 6. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 2, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Winnebago.....	72	7	46	61	14	556	444	7	3,674
Stephenson.....	108	4	27	93	12	886	639	11	7,464
Jo Daviess.....	72	20	24	30	22	617	282	47	4,324
Carroll.....	60	12	75	85	13	643	276	10	4,662
Whiteside.....	58	6	51	82	7	685	319	6	4,925
Rock Island.....	55	18	33	88	14	690	95	36	4,518

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

Livestock and livestock products. More than three-fourths of the farms are classed as livestock or dairy farms. Herds both of dairy cattle and beef cattle fit in well with the large acreages in pasture and hay. Hogs are another source of income on both dairy and beef cattle farms (Table 6). On some dairy farms they utilize large quantities of skimmilk and whey; on the beef-cattle farms they save much of the grain fed to steers that otherwise would be wasted. They are most numerous in the parts of the area that have the most level land. Sheep and poultry are minor enterprises.

Farm tenure. Thirty-nine percent of the farms in Area 2 were tenant-operated in 1950. Of these, 61 percent were share-rented, nearly all on a livestock-share basis; 20 percent were rented for cash, and 14 percent on a combined share-and-cash basis. As in Area 1, the proportion of cash-rented farms declined during the past 15 years.

Factors influencing development. The livestock pattern, though varying greatly, is rather closely related to the feeds produced. The choice between classes of livestock is dependent upon the market for dairy products and on the proportion and quality of tillable land on the individual farms. The resources and the personal likes and dislikes of the operator may also play an important part in the choice.

Numerous outlets for dairy products, condenseries, cheese factories, and creameries, are found in the area. Several cities of considerable size take large amounts of whole milk, and at times milk from this area has gone into the Chicago markets. In localities where dairy markets are not readily available, meat animals become more important. Farms on which more of the land is tillable and highly productive and on which more grain and less hay and pasture are produced, are especially adapted to the production of meat animals.

Area 3: Western, Livestock and Grain Area

Type of farms. Beef cattle and hogs are the major sources of income in Area 3, as indicated by the fact that livestock farms made up 59 percent of the commercial farms in 1950 (Table 7). Cash-grain farms made up 21 percent; general farms, 13 percent; and dairy farms 6 percent. Livestock, grain, and general farms, which together made up 93 percent of all farms in Area 3, are intermingled over the entire area, their location depending largely on soil conditions on individual farms.

In 1949 sales of livestock accounted for 65 percent of the income; crops provided 26 percent; dairy products, 6 percent; and poultry, 3 percent.

Table 7. — Number of Farms of Specified Types in Each County in Area 3, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Vege-table	Poultry	Other[b]	Miscel-laneous[c]	Total
DeKalb	280	305	1,146	215	11	55	5	114	2,131
Kendall	335	61	387	181	17	39	..	66	1,086
Ogle	318	408	1,104	509	2	32	5	171	2,549
Lee	851	170	655	456	..	44	10	148	2,334
Bureau	639	88	1,582	360	6	28	9	192	2,904
Henry	385	52	2,061	289	..	19	5	251	3,062
Mercer	180	19	1,312	52	..	34	..	172	1,769
Henderson	293	13	539	43	17	..	1	71	977
Warren	293	14	1,151	98	..	19	..	130	1,705
Knox	345	43	1,500	200	..	33	5	259	2,385
Stark	238	10	511	79	..	5	..	44	887
McDonough	542	47	1,003	271	..	24	..	216	2,103
Total	4,699	1,230	12,951	2,753	53	332	40	1,834	23,892
Percent of commercial farms[d]	21.3	5.6	58.7	12.5	.2	1.5	.2	....	.....

[a] United States Census.
[b] Includes fruit and nut farms and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 7.7 percent of all farms.
[d] Total number of commercial farms, 22,058.

Crops grown. Corn is the principal crop, occupying about 40 percent of the crop and pasture land (Table 8). Oats are the leading small-grain crop with about half as much acreage as corn. Hay production generally runs from 5 to 10 percent of the crop and pasture area. The amount of pasture varies greatly, depending upon topography; in some counties it includes a third of the entire cropland and pastureland. In recent years soybeans have been grown, particularly in the southern part of the area; however, the demand for feed crops and the need to control erosion have limited the acreage of this crop.

Although a considerable part of Area 3 is devoted largely to grain production, the area as a whole does not produce a large surplus of grains. Most of the feed grains and hay that are sold are purchased locally by farmers who do not raise enough of these crops to supply their own needs.

Table 8. — Percent of Cropland and Pastureland in Specified Crops, Area 3, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
DeKalb	43	4	24	(b)	11	4	13	1
Kendall	44	5	27	1	9	(b)	13	1
Ogle	33	1	24	(b)	12	5	23	2
Lee	41	5	23	1	9	2	18	1
Bureau	43	2	20	1	9	1	23	1
Henry	42	3	21	(b)	10	(b)	23	1
Mercer	36	3	15	1	9	(b)	34	2
Henderson	35	8	13	4	6	2	29	3
Warren	39	6	18	1	7	(b)	28	1
Knox	34	6	16	2	8	(b)	33	1
Stark	42	4	21	(b)	9	1	22	1
McDonough	35	9	14	7	4	1	29	1

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

Livestock and livestock products. Many combinations of the beef-cattle and hog enterprises are found in Area 3. In parts of the area where land is level and highly productive, large numbers of western cattle are shipped in and fed for market. This practice developed near the railway lines to the west because of the advantages in freight rates offered in earlier years to those buying or marketing feeder cattle. These freight rates account in part for the heavy cattle feeding which developed in Henry, Bureau, Lee, DeKalb, and Kendall counties and in adjacent parts of La Salle and Kane counties (Table 9).

In the western part of the area where considerable land must be left in pasture, beef cow herds are common, although steers are also fed. Throughout the area hogs are the most common class of meat animal, being produced in combination with cattle or by themselves.

Dairying, although a major enterprise on only a small proportion of the farms, is an important minor enterprise on many farms. Except in the southwestern counties, the greater part of the milk is sold as whole milk. Some small flocks of sheep are kept. Poultry flocks are found throughout the area, but both sheep and poultry are minor sources of income.

Farm tenure. Slightly less than half (47 percent) of the farms in Area 3 were rented in 1950. Of the rented farms, 44 percent were rented on a share-cash basis, 36 percent on a livestock-share basis, 9 percent on a cash basis, 7 percent on a crop-share basis, and 4 percent were unspecified.

Factors influencing development. Area 3 includes a large proportion of highly productive land. The land surface is level to gently rolling, except along the Mississippi river and smaller streams where there is considerable rough land suited only to pasture. In parts of the area erosion control is highly important.

Most of the soils are dark-colored with medium-textured, moderately permeable subsoils, and potentially they are as productive as any in the state. These dark soils on nearly level land make possible large quantities of feed-grain crops. The light-colored soils found along the

Table 9. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 3, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
DeKalb	35	6	100	82	14	541	222	9	4,189
Kendall	25	9	62	60	14	672	106	7	6,660
Ogle	50	10	57	60	13	544	253	5	3,995
Lee	36	10	40	45	16	465	172	6	3,431
Bureau	29	19	57	80	10	500	117	12	3,349
Henry	30	14	79	115	9	590	73	25	3,986
Mercer	21	25	46	97	13	419	22	40	2,461
Henderson	19	20	44	70	14	339	25	25	1,977
Warren	19	22	57	83	13	366	32	26	2,170
Knox	23	27	40	73	14	459	42	39	2,807
Stark	20	23	32	62	18	379	71	11	2,178
McDonough	24	20	29	63	11	404	47	28	2,694

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

rivers and streams are lower in productivity. They are used chiefly for hay and for pastureland which, in turn, are used to feed livestock.

The growing season in this region ranges from 160 to 180 days.

Several direct rail lines which cross the area provide shipping advantages in securing feeder cattle from the western and southwestern states. Most fed cattle move on to market by truck.

Under these conditions the personal preference of the operator is often a determining influence. Frequently hogs and steer feeding are important enterprises on highly tillable farms because of the operator's training or preference for that type of farming.

Area 4: East-Central, Cash-Grain Area

Types of farms. Area 4 is the largest farming-type area in Illinois and includes 28 counties and one-third of the total farmland in the state. It is the most important cash-grain area found anywhere in the corn belt. Corn is the dominant crop throughout the area but different secondary crops are grown.

Using the secondary crops as a basis, the area may be divided into three subdivisions. In subarea 4a, consisting of all or part of ten counties in the northern section of the general east-central area, oats rank second among the crops. In 4b, which involves 13 counties in the

Table 10. — Number of Farms of Specified Types in Each County in Areas 4a, 4b, and 4c, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Vege-table	Poultry	Other[b]	Miscel-laneous[c]	Total
Area 4a									
Will	1,288	410	311	311	54	104	5	454	2,937
Grundy	952	29	90	107	..	19	..	53	1,250
LaSalle	2,159	113	736	376	12	42	..	292	3,730
Putnam	193	21	177	42	..	0	5	30	468
Marshall	546	20	358	133	..	15	..	118	1,190
Woodford	966	66	376	196	6	25	5	147	1,787
Livingston	2,428	64	245	335	5	99	..	110	3,286
Ford	973	11	141	180	1	33	..	38	1,377
McLean	2,190	110	690	419	5	31	5	323	3,773
Tazewell	1,042	119	342	267	4	41	20	293	2,128
Total	12,737	963	3,466	2,366	87	409	40	1,858	21,926
Percent of commercial farms[d]	63.5	4.8	17.3	11.8	.4	2.0	.2	....	.....
Area 4b									
Kankakee	1,452	89	154	128	49	34	..	378	2,284
Iroquois	2,370	64	361	471	15	74	10	161	3,526
Vermilion	1,564	87	528	201	24	39	..	759	3,202
Champaign	2,403	64	230	148	10	40	..	213	3,108
Piatt	903	15	104	69	..	26	10	87	1,214
DeWitt	814	23	227	118	..	4	..	170	1,356
Logan	1,413	15	221	93	..	29	..	95	1,866
Macon	1,248	46	197	140	..	31	10	562	2,234
Moultrie	695	34	177	125	..	39	..	157	1,227
Douglas	934	44	126	106	..	43	5	100	1,358
Edgar	907	61	518	198	5	25	..	172	1,886
Coles	844	44	472	171	6	55	17	277	1,886
Shelby	1,195	248	554	506	..	107	..	509	3,119
Total	16,742	834	3,869	2,474	109	546	52	3,640	28,266
Percent of commercial farms[d]	68.0	3.4	15.7	10.1	.4	2.2	.2	....	.....
Area 4c									
Mason	849	14	111	83	..	29	5	66	1,157
Cass	494	..	242	66	10	15	..	105	932
Menard	463	15	236	93	5	30	10	88	940
Sangamon	1,178	101	660	198	15	52	5	525	2,734
Christian	1,412	41	346	195	..	41	..	301	2,336
Total	4,396	171	1,595	635	30	167	20	1,085	8,099
Percent of commercial farms[d]	62.7	2.4	22.7	9.1	.4	2.4	.3	....	.....

[a] United States Census.
[b] Includes fruit and nut farms and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 11.2 percent of total farms.
[d] Total number of commercial farms: 4a, 20,068; 4b, 24,626; 4c, 7,014.

central section of the area, soybeans stand in second place. In 4c, made up of approximately five counties in the southwestern section, soybeans and wheat are important secondary crops.

Throughout the area cash-grain farms predominate, accounting for 64 percent in 4a, 68 percent in 4b, and 63 percent of the commercial farms in 4c (Table 10). Livestock farms rank second, ranging from 16 to 23 percent, and general farms from 9 to 12 percent. Dairy and poultry farms are few in number, dairy including from 2 to 5 percent of the farms and poultry about 2 percent.

Variations among the three subareas are illustrated further by differences in their sources of income in 1949:

	Percent of total farm income		
	4a	*4b*	*4c*
All crops	55	67	59
Livestock	33	24	35
Dairy products	7	5	3
Poultry	5	4	3
Total	100	100	100

Crops grown. Corn, the major crop, occupies from 30 to 40 percent of the crop and pastureland (Table 11). During World War II, soybean acreage was expanded to supply the need for vegetable oils and protein feeds. Soybeans are grown most heavily in 4b and least in 4a. Oats, a cool-weather crop, yield best in the northern counties but yields decrease sharply toward the southern and western sections of the area. The acreage of wheat in 4b and 4c has declined in recent years because of the competition with soybeans. At no time has much wheat been grown in 4a.

Hay acreage is quite limited throughout the area, having declined when horses were replaced with tractors. The sharp increase in soybean acreage has had little effect on the amount of corn grown, but has reduced the amounts of oats, wheat, and hay. In most counties pasture occupies from 10 to 25 percent of the farmland, varying with topographic conditions.

Livestock and livestock products. While cash-grain farming predominates, livestock and livestock products furnish appreciable income. The kinds and number of livestock vary from farm to farm. Dairy cows are kept on many farms, and in area 4a most of the milk is sold as whole milk (Table 12). Limited numbers of beef cattle are fed, and some beef herds are kept, especially in localities with larger amounts of pastureland. Hogs are raised on most farms and produce

more income than any other class of livestock. Few sheep are kept. Flocks of chickens are found on most farms, but, except in a few communities, specialization in poultry is limited.

Farm tenure. The proportion of tenant farms in Area 4 ranged from 30 to 59 percent in the individual counties, and averaged 50 percent in 4a, 44 percent in 4b, and 43 percent in 4c. Share-cash leases were used on 61 to 63 percent of the rented farms in the three subareas. Crop-share leases were found on 16 to 22 percent; livestock-share leases on 7 to 10 percent; and cash leases on 6 to 7 percent.

Factors influencing development. Area 4 contains a high proportion of dark-colored highly productive soils on land that is level to gently rolling. The growing season is from 160 to 180 days, with warm summers and adequate summer rainfall. The productivity of the land and the high proportion that is tillable result in a high income per acre and per farm. While grain farming predominates, many grain farms receive income from livestock enterprises which is comparable

Table 11. — Percent of Cropland and Pastureland in Specified Crops, Areas 4a, 4b, and 4c, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Area 4a								
Will	39	10	24	2	8	2	14	1
Grundy	44	10	22	1	5	1	16	1
LaSalle	44	6	24	(b)	7	1	17	1
Putnam	36	5	18	2	8	1	29	1
Marshall	39	7	20	2	6	2	23	1
Woodford	41	6	23	1	6	1	21	1
Livingston	47	9	26	(b)	5	(b)	12	1
Ford	45	10	24	(b)	5	2	13	1
McLean	48	9	21	1	5	(b)	15	1
Tazewell	38	10	14	7	6	3	19	2
Area 4b								
Kankakee	44	15	19	3	5	1	12	1
Iroquois	44	16	19	2	5	1	12	1
Vermilion	37	23	10	8	3	3	15	1
Champaign	44	21	17	4	3	(b)	10	1
Piatt	39	24	15	6	3	1	11	1
DeWitt	40	19	14	3	4	1	18	1
Logan	41	15	15	9	5	(b)	13	2
Macon	39	22	13	8	4	(b)	13	1
Moultrie	38	22	12	7	4	(b)	16	1
Douglas	41	26	14	6	2	(b)	10	1
Edgar	35	22	10	8	3	1	20	1
Coles	37	20	10	6	4	1	20	2
Shelby	31	19	9	8	5	(b)	26	2
Area 4c								
Mason	35	10	9	17	4	7	13	5
Cass	30	17	7	11	4	4	24	3
Menard	33	18	9	11	5	1	22	1
Sangamon	34	20	11	10	4	(b)	19	2
Christian	32	24	9	15	4	(b)	15	1

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

Table 12. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Areas 4a, 4b, and 4c, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Area 4a									
Will	37	4	27	17	6	602	213	6	4,142
Grundy	22	10	19	15	19	482	111	20	3,342
LaSalle	28	15	37	32	18	491	106	7	3,647
Putnam	29	22	34	42	13	409	108	9	2,602
Marshall	26	19	27	49	14	520	83	11	3,671
Woodford	29	16	26	36	13	566	102	15	5,347
Livingston	24	12	20	18	9	717	81	15	7,365
Ford	19	14	24	23	7	585	44	21	5,250
McLean	25	15	30	36	13	486	79	16	3,401
Tazewell	29	14	20	33	11	462	118	15	3,540
Area 4b									
Kankakee	31	5	16	16	5	516	154	13	3,559
Iroquois	23	10	16	21	9	630	61	22	5,582
Vermilion	18	9	18	23	15	411	36	17	2,239
Champaign	20	11	18	17	11	413	50	20	2,795
Piatt	19	11	17	22	8	383	42	20	2,762
DeWitt	20	17	21	32	11	432	43	19	2,501
Logan	21	11	19	27	11	541	47	23	3,555
Macon	20	9	18	18	8	435	51	20	2,477
Moultrie	25	7	11	15	10	478	88	14	2,863
Douglas	17	7	9	20	7	462	34	25	3,508
Edgar	19	10	22	29	11	381	36	18	2,180
Coles	20	8	18	26	7	502	41	18	2,569
Shelby	32	7	12	19	14	717	104	15	4,673
Area 4c									
Mason	16	9	9	19	2	373	35	14	2,316
Cass	16	13	18	29	7	403	15	18	2,270
Menard	19	13	29	44	10	498	37	18	3,282
Sangamon	18	15	22	38	14	394	39	12	2,049
Christian	20	9	15	26	7	458	57	12	2,615

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

to that on farms devoted primarily to raising livestock but located in less-productive areas.

The early development of the area was retarded by a lack of railroads and timber and the need for artificial drainage. For these reasons, it was not until the latter part of the nineteenth century that the agricultural resources were fully utilized. Consequently the soils, naturally fertile, have been cropped for a shorter period than those in parts of the state that were settled earlier. With the increased use of artificial fertilizers, soil fertility can be maintained or increased even under fairly intensive cropping. Because of the nearly level character of much of the land, erosion control is not a serious problem. The high proportion of tenancy fits in well with a cash-grain type of farming. The deficit-feed area of New England and other eastern states provides a ready market for surplus feeds, and the soybean-processing plants within the area furnish convenient markets for this crop.

Area 5: West-Central, General Farming Area

Type of farms. Area 5 bears a general resemblance to Area 3, but because of less productive soils and more sloping land surface, the farming is less intensive. Forty-six percent of the commercial farms were classed as livestock farms in 1950, 30 percent as grain farms, 15 percent as general farms, and 6 percent as dairy farms (Table 13). While the major sources of income are the same as in Area 3, there are distinct differences in the organization of individual farms, and in the conditions affecting types of farming.

In 1949 sales of livestock returned 52 percent of the income; crops, 38 percent; dairy products, 6 percent; and poultry, 4 percent.

Within this area is a small subarea consisting of Calhoun county and parts of Jersey, Pike, and Adams counties, in which apple production has thrived. This part of the area is less specialized than formerly, and other products are usually combined with fruit production.

Crops grown. Corn is the major crop, occupying from 20 to 30 percent of the crop and pastureland (Table 14). The acreages of soybeans and wheat are about equal but less than that in corn. They are produced most intensively on the more level portion of the area east of the Illinois river. In spite of the fact that the corn acreage is the largest, soybeans and wheat are the chief crops sold. Most of the corn is used within the area. Oats and hay are grown for home use. Pasture

Table 13. — Number of Farms of Specified Types in Each County in Area 5, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Fruit and nut	Poultry	Other[b]	Miscel-laneous[c]	Total
Peoria	588	121	816	203	5	39	15	465	2,252
Fulton	513	60	1,441	266	4	37	9	450	2,780
Schuyler	382	29	551	182	..	14	..	176	1,334
Brown	135	20	639	66	..	5	..	92	957
Adams	518	196	1,303	422	25	55	15	362	2,896
Hancock	740	62	1,242	396	5	57	15	275	2,792
Pike	440	63	1,329	187	14	34	5	367	2,439
Scott	275	5	335	77	..	5	..	82	779
Morgan	687	50	625	182	..	23	..	194	1,761
Calhoun	104	...	435	77	52	21	..	212	901
Greene	421	85	683	164	6	50	..	209	1,618
Jersey	342	107	296	154	26	15	10	266	1,216
Macoupin	1,054	234	773	508	..	38	..	553	3,160
Montgomery	852	295	380	609	..	70	..	375	2,581
Total	7,051	1,327	10,848	3,493	137	463	69	4,078	27,466
Percent of commercial farms[d]	30.1	5.7	46.4	14.9	.6	2.0	.3	....	.....

[a] United States Census.
[b] Includes vegetable farms and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 14.8 percent of all farms.
[d] Total number of commercial farms, 20,871.

Table 14. — Percent of Cropland and Pastureland in Specified Crops, Area 5, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Peoria	31	7	16	4	8	1	32	1
Fulton	28	7	10	7	5	1	40	2
Schuyler	23	9	8	10	5	1	43	1
Brown	22	6	9	6	4	1	49	3
Adams	22	8	11	11	7	(b)	38	3
Hancock	27	11	12	9	5	1	34	1
Pike	25	7	7	7	5	1	40	8
Scott	32	12	4	15	4	1	29	3
Morgan	30	16	8	12	5	(b)	28	1
Calhoun	19	4	2	7	5	7	46	10
Greene	28	13	4	11	5	(b)	36	3
Jersey	24	13	3	15	6	1	33	5
Macoupin	23	20	5	11	6	(b)	33	2
Montgomery	23	21	8	13	6	(b)	28	1

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

areas range from a third to a half of the total acreages in the various counties.

Livestock and livestock products. Hogs are the most common livestock in all parts of Area 5 (Table 15). Dairy cows are found in greatest numbers near cities and on the fringe of the St. Louis milkshed. Three-fourths of the milk is marketed as whole milk and one-fourth as butterfat. Beef-cow herds are found throughout the area and cattle feeding includes feeders that are shipped in as well as those that are raised in the area. Sheep are kept in small numbers and chicken flocks are common.

Table 15. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 5, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Peoria	29	16	20	52	14	526	92	22	3,255
Fulton	22	17	33	52	12	414	31	31	2,598
Schuyler	24	15	11	37	7	406	37	30	2,354
Brown	21	20	13	48	9	471	32	25	2,614
Adams	34	16	12	44	12	516	89	27	3,057
Hancock	26	19	24	46	12	473	54	26	3,269
Pike	17	22	19	54	10	418	29	11	2,110
Scott	15	15	17	43	6	437	7	17	2,344
Morgan	18	20	23	43	13	462	22	20	2,379
Calhoun	21	12	14	37	7	707	7	20	3,704
Greene	24	18	24	46	7	462	73	13	2,471
Jersey	30	11	13	32	4	564	100	18	3,214
Macoupin	31	12	21	30	15	611	111	12	3,236
Montgomery	34	7	15	26	13	702	132	7	4,583

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

Farm tenure. An average of 31 percent of the farms were rented in 1950, although the proportion of rented farms varied widely from county to county. Share-cash leases were most common and included 48 percent of the rented farms. Livestock-share leases made up 20 percent; crop-share leases, 17 percent; cash leases, 8 percent; and 7 percent were unspecified.

Factors influencing development. Less than three-fourths of the farmland in Area 5 is tillable. However, large acreages of dark-colored bottomland soils found along the Mississippi and Illinois rivers are very productive when drained. These areas are used mostly for grain farming.

The largest amount of untillable land lies west and north of the Illinois river; here in some places more than half of the farmland cannot be cultivated. In addition to the roughness of the surface, the type (light-colored) and condition of the soil are such that hay and pasture crops must occupy an important place in the cropping system. Livestock must be raised in order to use the roughage and pasture and to help maintain the fertility of the soil. East of the Illinois river, the land surface is less broken, and some of the soils are dark-colored and more productive.

Over the entire area, nearly all the farmland not in grain crops is used for pasture. Nearly two-thirds of the land pastured west of the Illinois river is woodland, while less than half is woodland in the eastern part.

In Calhoun county and in sections of the adjoining counties the land is too rough for successful cultivation of annual crops, but both soil and climatic conditions favor the production of fruit.

Local emphasis on dairy and vegetable products occurs in regions near population centers.

Area 6: Southwestern, General Farming and Dairy Area

Type of farms. Area 6 differs from Area 5 in that it contains a much higher proportion of general farms and dairy farms and fewer livestock farms. In this area, 32 percent of the commercial farms were cash-grain farms; 31 percent, general farms; 17 percent, dairy farms; 15 percent, livestock farms; and 4 percent, poultry farms (Table 16).

Sales of field crops produced 40 percent of the income in 1949; livestock, 28 percent; dairy products, 19 percent; poultry products, 10

Table 16. — Number of Farms of Specified Types in Each County in Area 6, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Fruit and nut	Poultry	Other[b]	Miscel-laneous[c]	Total
Effingham.....	431	288	204	519	..	79	5	322	1,848
Fayette.....	730	240	401	590	5	127	..	615	2,708
Bond.....	275	310	184	398	9	18	..	277	1,471
Clinton.....	452	351	91	460	5	90	..	219	1,668
Washington....	694	292	73	503	41	36	10	255	1,904
Madison.....	632	582	367	691	5	63	64	797	3,201
St. Clair.....	863	185	312	593	10	69	23	383	2,438
Monroe.....	443	20	151	436	5	70	5	214	1,344
Randolph.....	364	259	419	496	29	43	5	287	1,902
Total.....	4,884	2,527	2,202	4,686	109	595	112	3,369	18,484
Percent of commercial farms[d]	32.3	16.7	14.6	31.0	.7	3.9	.8	....	.....

[a] United States Census.
[b] Includes vegetable farms and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 18.2 percent of all farms.
[d] Total number of commercial farms, 15,115.

percent; and horticultural products, 3 percent. Sales of cows and calves from dairy herds added materially to livestock sales.

Crops grown. Wheat is the grain crop best adapted to this area, especially in the western and southern counties. Since it is sown in the fall, it is not affected by the fact that the soils dry out slowly in the spring. Soybeans, which are grown most extensively in the eastern part, are also well adapted to the area because of their short growing season. They may be planted later than either oats or corn and still mature before frost. These two crops, wheat and soybeans, account for one-third of the income from sales of the area. Corn is grown throughout the area for feed. Any surplus on one farm or in one section is sold to other farmers in the area. Oats and hay are also grown as feed crops on much smaller acreages. Pasture occupies from 15 to 30 percent of the crop and pastureland. Small amounts of idle land were found in all counties (Table 17).

Livestock and livestock products. Dairy cows are the most important type of livestock (Table 18). In recent years restrictions set forth in city ordinances have greatly reduced the number of farms selling Grade A milk. However, the size of the herds on farms that do sell Grade A milk has been increased. Large quantities of whole milk and small amounts of butterfat are sold on the St. Louis market. Hogs, which rank second in livestock production, are most numerous in the western counties. Beef cows, feeder cattle, and sheep are kept in small numbers on many farms. There are a few large livestock operations. Poultry and egg production exceeds that in any other area

Table 17. — Percent of Cropland and Pastureland in Specified Crops, Area 6, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Effingham	20	24	8	9	7	1	28	3
Fayette	19	23	6	7	7	1	32	5
Bond	20	19	8	10	7	(b)	32	4
Clinton	21	16	12	21	7	(b)	19	4
Washington	13	13	9	29	5	4	20	7
Madison	22	14	5	22	8	1	24	4
St. Clair	22	13	7	28	6	2	15	7
Monroe	24	4	5	32	5	2	15	13
Randolph	22	6	6	20	7	1	25	13

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

of the state and accounts for 10 percent of the farm sales in Area 6, the heaviest poultry concentration being in Effingham, Clinton, and Monroe counties.

Farm tenure. Twenty-nine percent of the farms in Area 6 were rented in 1950. Share-cash rentals occurred on 57 percent of the rented farms; crop-share leases on 22 percent; cash leases on 11 percent; livestock-share leases on 3 percent, and 7 percent were not specified.

Factors influencing development. Variations in soil and climatic conditions, available markets, and transportation facilities have resulted in considerable differences in the importance of the several products of this area.

Many of the soils will produce fair crops if drainage is provided and limestone and fertilizers are applied, but their natural productivity does not compare favorably with soils in the areas already described. The proportion of the land in Area 6 that cannot be cultivated is high, and much of the tillable land is of poor quality.

Table 18. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 6, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Effingham	47	4	8	13	6	1,127	174	26	8,667
Fayette	33	6	9	13	12	904	98	16	5,535
Bond	38	4	9	25	10	791	196	1	4,791
Clinton	52	4	9	16	3	1,232	303	3	10,001
Washington	42	4	8	9	3	871	197	6	7,095
Madison	48	5	12	22	5	954	269	6	6,591
St. Clair	34	6	14	22	6	898	152	13	7,441
Monroe	24	3	8	26	9	1,125	69	32	10,172
Randolph	38	7	16	19	7	817	139	27	6,649

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

The kind of soil found over a large part of Area 6 necessitates a type of farming that makes productive use of a great deal of labor. This circumstance has encouraged the dairy industry even though the quality of the soil and the size of farms prevent the intensive kind of dairying carried on in the Chicago area. The population of St. Louis and East St. Louis, almost one and one-half millions, provides a market for large quantities of dairy, poultry, and vegetable products. Nearly 60 percent of the milk consumed in the city is produced in Illinois. Since the tank-car, the truck, and tank-truck have reduced the cost of transporting milk, the limits of the area supplying milk to St. Louis have been extended.

On bottomland soils along the Mississippi river and smaller inland rivers, where grain farming is predominant, high yields of corn and wheat have been obtained. The poor drainage on many of the bottomland farms is unfavorable to livestock production; it frequently leads to insanitary conditions around barns and hog houses and makes control of disease difficult.

On the upland over most of the western third of Area 6 are found light to dark-colored soils with moderately slowly permeable subsoils. On the dark-colored soils, drainage is often a problem. Acidity may also limit production. Limestone must be applied before alfalfa or sweet clover can be grown, but experience has shown that the expense of growing these legumes is fully justified by the increased yields of the grain crops that follow. The acreage of wheat in this part of Area 6 exceeds that of corn.

In the eastern part of Area 6 the soils are light- to medium-colored with very fine-textured, very slowly permeable subsoils. On these soils drainage is limited to surface runoff, and productivity is low. In recent years the acreage of soybeans has exceeded that of corn because of the greater resistance of soybeans to drouth.

Area 7: South-Central, General Farming Area

Types of farms. Farming in Area 7 is conducted on a smaller scale than in other areas. Soils are less productive and there are fewer acres on each farm. Capital investment is low and farm income is meager. Often a product is grown not because of its market value but because of its usefulness to the operator's family.

Much variation occurs. Cash-grain farms, livestock farms, and general farms are nearly equal in number, each accounting for about 28 percent of the commercial farms (Table 19). Dairy farms and poultry farms each represent 7 percent. In limited areas, fruit produc-

Table 19. — Number of Farms of Specified Types in Each County in Area 7, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Fruit and nut	Poultry	Other[b]	Miscel-laneous[c]	Total
Cumberland....	465	38	365	242	5	47	28	412	1,602
Clark.....	478	89	440	509	5	89	25	417	2,052
Crawford.....	375	107	401	266	5	36	..	627	1,817
Jasper.....	527	50	417	527	..	109	..	455	2,085
Richland.....	209	80	224	474	..	85	5	414	1,491
Clay.....	430	47	259	446	5	103	..	581	1,871
Marion.....	486	103	353	420	65	103	..	823	2,353
Wayne.....	523	69	599	537	..	197	..	899	2,824
Jefferson.....	398	77	548	443	23	96	..	1,293	2,878
Hamilton.....	248	40	419	274	..	158	4	659	1,802
Saline.....	278	65	320	222	..	44	13	893	1,835
Williamson.....	144	118	330	102	13	55	..	1,295	2,057
Franklin.....	249	106	223	182	18	53	5	1,443	2,279
Perry.....	165	154	214	308	..	62	5	603	1,511
Total.....	4,975	1,143	5,112	4,952	139	1,237	85	10,814	28,457
Percent of commercial farms[d]	28.2	6.5	29.0	28.0	.8	7.0	.5	....	.....

[a] United States Census.
[b] Includes vegetable farms and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 38.0 percent of all farms.
[d] Total number of commercial farms, 17,643.

tion is still emphasized. Sales of field crops produced 41 percent of the income in 1949; livestock, 39 percent; poultry and eggs, 11 percent; dairy products, 7 percent; and horticultural products, 2 percent.

Of all the farms in the area, 38 percent are noncommercial. Such farms are most prevalent in the coal- and oil-producing areas, where they are used as rural residences and as part-time farms to supplement nonfarm income.

Crops grown. With the rapid increase in soybeans in recent years, crop production has undergone a great change in this area. Soybeans are second to corn in acreage, and in several counties they are the most extensively grown crop (Table 20). Wheat ranks third as a grain crop. Oats and hay are grown as feed crops. Parts of this area formerly grew large amounts of redtop and timothy for seed and hay, but the market for this type of hay has largely disappeared with the reduction in the number of horses. However the greater use of fertilizers and limestone has aided the shift to more grain crops. Nevertheless grass and legume seed production in Area 7 is the heaviest of any part of the state (Fig. 23 on page 73).

Fruit production, particularly of peaches, has declined sharply in recent years partly because of winter damage to trees and partly because of competition from more favored areas in other states.

Nearly one-third of the crop and pastureland is in pasture, very

Table 20. — Percent of Cropland and Pastureland in Specified Crops, Area 7, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Cumberland	27	24	6	6	5	1	28	3
Clark	26	19	4	11	5	1	29	5
Crawford	26	15	3	9	7	1	29	10
Jasper	23	28	7	7	8	(b)	23	4
Richland	19	18	4	8	13	1	26	11
Clay	17	26	5	6	10	1	28	7
Marion	14	22	6	8	7	3	32	8
Wayne	25	15	2	5	9	1	31	12
Jefferson	20	15	4	9	7	1	31	13
Hamilton	26	12	3	7	6	2	29	15
Saline	27	12	2	8	7	2	31	11
Williamson	19	8	1	4	9	2	40	17
Franklin	17	12	1	15	6	2	30	17
Perry	17	9	5	14	6	4	28	17

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

little of which has been improved. In 1949, in a majority of the counties, idle land exceeded 10 percent of the total cropland and pastureland.

Livestock and livestock products. There is little livestock in all parts of Area 7 owing to the small amount of feed produced per acre. Dairy cattle are most common (Table 21). Whole milk comprises about two-thirds of dairy sales and butterfat about one-third. Hogs, which are kept in limited numbers, are most numerous in counties where corn yields are the highest. Pigs are fed out when grain feeds are adequate but are sold as feeder pigs when local grain supplies are short. In parts of the area, beef-breeding herds have been established to produce feeders on pasture. Poultry numbers are nearly as high as in Area 6, but egg sales are somewhat lower. On many farms, chickens and eggs are a major source of income.

Farm tenure. Only 16 percent of the farms in Area 7 were tenant-operated in 1950. Crop-share leases were used on 36 percent of the rented farms; share-cash leases on 27 percent; cash leases on 16 percent; livestock-share leases on 6 percent; and 15 percent were unspecified.

Factors influencing development. The land surface of Area 7 is level to gently rolling. Differences exist in soils but the natural productivity of all soils is relatively low. On the more level areas, drainage is a big problem because the subsoil is too tight to permit underdrainage. On the rolling land, particularly near the streams, erosion is difficult

to control. Except in the bottomlands along streams, the soils are light-colored or light- to medium-colored with very fine-textured slowly to very slowly permeable subsoils. These soils are strongly acid; this condition accounts in part for the increase in acreages of soybeans and lespedeza, both of which are relatively tolerant to acid soils. Heavy applications of limestone and fertilizers have greatly improved the productive capacity of these soils.

Table 21. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 7, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Cumberland.....	31	6	11	24	5	960	58	23	5,771
Clark.....	24	10	11	25	8	789	53	14	4,613
Crawford.....	23	13	18	23	15	715	52	10	4,453
Jasper.....	27	10	12	21	14	1,273	42	20	8,693
Richland.....	26	14	11	14	11	958	59	10	6,859
Clay.....	25	15	8	13	12	994	26	18	6,102
Marion.....	27	11	7	12	16	803	40	31	4,412
Wayne.....	27	14	8	15	14	1,092	16	19	7,187
Jefferson.....	28	9	6	21	10	980	22	42	6,345
Hamilton.....	23	8	5	18	10	1,217	15	20	8,172
Saline.....	23	14	10	17	4	790	28	16	3,488
Williamson.....	31	15	9	14	4	755	46	23	2,824
Franklin.....	25	12	7	17	8	787	30	18	3,416
Perry.....	32	10	9	14	12	762	58	33	4,465

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

Area 8: Southeast, Grain and Livestock Area

Types of farms. A combination of cash grain and livestock is the type of farming most common in Area 8. Cash-grain farms and livestock farms were equal in number in 1950 and together accounted for three-fourths of the commercial farms in the area (Table 22). Seventeen percent were classified as general farms; 5 percent as poultry farms, and 3 percent as dairy farms. Crops returned 52 percent of the income in 1949; livestock other than poultry, 38 percent; poultry and eggs, 7 percent; and dairy products, 3 percent.

Crops grown. Corn, which is concentrated most heavily on the bottomlands, is the leading grain crop (Table 23). Soybeans and wheat occupy about equal acreages, both being grown most extensively in the northern counties. Hay is grown for home use. Popcorn, strawberries, and melons are minor crops. Nearly one-fourth of the land is in pasture and one-tenth to one-eighth is idle.

Table 22. — Number of Farms of Specified Types in Each County of Area 8, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Fruit and nut	Poultry	Other field crops[b]	Miscel-laneous[c]	Total
Lawrence	355	35	290	152	5	35	..	496	1,368
Wabash	245	5	183	109	5	20	..	139	706
Edwards	178	20	307	158	..	76	..	194	933
White	522	33	506	145	5	51	..	327	1,589
Gallatin	248	15	272	157	..	34	25	147	898
Total	1,548	108	1,558	721	15	216	25	1,303	5,494
Percent of commercial farms[d]	36.9	2.6	37.2	17.2	.3	5.2	.6	....	.....

[a] United States Census.
[b] Includes field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 23.7 percent of all farms.
[d] Total number of commercial farms, 4,191.

Livestock and livestock products. Hogs are the principal livestock in Area 8; the number of brood sows is the greatest in the southern Illinois areas (Table 24). A few dairy cows are kept, and the milk is marketed both as whole milk and as butterfat. A limited amount of cattle feeding is carried on, and there are some beef herds. Few sheep are found. Poultry is most important in the upland areas.

Farm tenure. Twenty-one percent of the farms in Area 8 were rented in 1950. Crop-share leases were most prevalent, accounting for 55 percent of the rented farms. Share-cash leases were found on 15 percent of the farms, livestock-share leases on 11 percent; cash leases on 8 percent; and 11 percent were unspecified.

Factors influencing development. Area 8 lies along the Wabash river in southeastern Illinois. It is made up of the bottomland and adjoining uplands along this river and along the lower ends of the Saline, Skillet Fork, Little Wabash, and Embarrass rivers.

Three associations of soils are found in this area: (1) bottomland

Table 23. — Percent of Cropland and Pastureland in Specified Crops, Area 8, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Lawrence	28	17	2	13	6	1	23	10
Wabash	29	17	2	18	6	3	18	7
Edwards	26	13	2	13	7	2	27	10
White	34	11	2	11	3	2	21	16
Gallatin	40	3	2	6	4	6	26	13

[a] Rounded to nearest whole percent.

Table 24. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 8, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat*	
Lawrence.....	17	10	9	16	13	636	21	18	3,569
Wabash.....	17	15	10	25	10	659	27	11	4,157
Edwards.....	21	16	17	27	17	1,012	30	18	8,169
White.....	13	10	7	22	6	612	5	15	3,470
Gallatin.....	14	9	14	27	9	798	4	17	3,905

* Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

soils, (2) sandy soils, especially on stream terraces, and (3) yellowish-gray upland soils. The bottomland soils, which are subject to overflow if levees and adequate drainage facilities have not been provided, are relatively fertile soils and when protected produce good crops of grain.

Sandy loams and sands are found on terraces along the rivers. These soils vary greatly in productivity, but they are not generally so good as the bottomland and a greater share of them must be kept in hay and pasture if fertility is to be maintained.

The topography of the light-colored upland soils varies from level to rolling, but because of the soil types erosion is still a serious problem. These soils are not naturally so highly productive as the bottomlands but they are potentially good soils if properly handled.

Practically all the grain farms in this area are in the bottomlands; on most farms on the bottomlands grain crops occupy a large proportion of the cropland. A great many of the general farms and of the livestock farms include some bottomland and some upland soil. Hay and pasture must occupy an important place in the rotation on the light-colored soils, but sufficient grain can be produced on the bottomland to feed considerable livestock. As a result, a type of farming combining the grain production of the bottomland with the grassland of the upland areas has developed. A part of the corn produced is trucked out to other areas.

Area 9: Southern, General Farming and Fruit Area

Types of farms. More than half of Area 9 is within the general area of the Shawnee National Forest; but a considerable part of the better land within the forest area is still operated as farms. Much variation occurs within Area 9. Of the commercial farms, 39 percent were classified as livestock farms; 24 percent as general farms; 20 percent as cash-grain farms; and 8 percent as dairy farms (Table 25).

Table 25. — Number of Farms of Specified Types in Each County of Area 9, 1950[a]

County	Cash grain	Dairy	Live-stock	General	Fruit and nut	Poultry	Other[b]	Miscel-laneous[c]	Total
Jackson	310	204	357	399	29	24	..	620	1,943
Union	175	133	322	331	72	24	57	421	1,535
Johnson	31	54	461	113	28	23	8	565	1,283
Pope	108	24	259	113	..	20	..	411	935
Hardin	33	4	204	32	..	16	4	353	646
Alexander	206	...	91	49	5	5	92	195	643
Pulaski	117	34	210	200	10	19	63	329	982
Massac	144	30	311	148	14	35	..	287	969
Total	1,124	483	2,215	1,385	158	166	224	3,181	8,936
Percent of commercial farms[d]	19.5	8.4	38.5	24.1	2.7	2.9	3.9	....	.....

[a] United States Census.
[b] Includes vegetable and field crops other than grain.
[c] Includes part-time, residential, and abnormal farms, and farms that do not fit other classifications; equals 35.6 percent of all farms.
[d] Total number of commercial farms, 5,755.

Fruit and vegetable production, while limited in area, have long been important.

Sales of livestock represented 40 percent of income in 1949; field crops, 30 percent; dairy products, 8 percent; and poultry and eggs, 7 percent. Horticultural products, chiefly fruits, provided 15 percent of the income, although farms classed as fruit or vegetable farms made up only 4 percent of commercial farms.

Crops grown. Corn is the most extensively produced crop, with soybeans in second place (Table 26). Because of the very broken topography in much of the area, all counties except Alexander had from 38 to 68 percent of the crop and pastureland in hay or pasture; more than 10 percent was idle.

Fruit production, especially in the smaller orchards, has declined sharply in recent years because of the competition from other areas.

Table 26. — Percent of Cropland and Pastureland in Specified Crops, Area 9, 1949[a]

County	Corn	Soy-beans	Oats	Wheat	Hay	Other crops	Pasture (includes woodland pastured)	Idle
Jackson	22	9	2	10	7	4	33	13
Union	19	7	1	5	12	7	36	13
Johnson	14	4	1	1	13	3	54	10
Pope	18	5	1	2	11	3	48	12
Hardin	17	1	(b)	(b)	10	1	58	13
Alexander	29	21	(b)	4	8	5	22	11
Pulaski	24	17	3	3	9	5	29	10
Massac	25	12	2	3	9	2	40	7

[a] Rounded to nearest whole percent.
[b] Less than one-half of 1 percent.

There are less than one-fifth as many apple and peach trees as there were in 1924. Yields per tree of both fruits have increased but total income is less. Fruit production is centered largely in Union, Jackson, and Johnson counties.

Vegetable production is important only in Union county. A limited amount of cotton has been grown in the southern part of this area.

Livestock and livestock products. Cattle and hogs account for most of the livestock income, which varies widely from county to county. Counties with small areas of bottomlands along the Mississippi and Ohio rivers have the greater feed supply and the larger number of grain-consuming livestock (Table 27). Other counties operate more on pasture. Dairy products, poultry, and sheep are minor sources of income.

Farm tenure. In Area 9, as in other areas of southern Illinois, the proportion of tenancy is low; 16 percent of the farms are rented. Of these, 49 percent were rented on a crop-share basis; 12 percent on the livestock-share basis; 11 percent on a cash basis; 9 percent on a share-cash basis; and 19 percent were unspecified.

Factors influencing development. Area 9 includes the unglaciated section of southern Illinois. With the exception of small areas of bottomland along the Mississippi and Ohio rivers and a narrow strip of lowland extending across the northern parts of Pulaski and Massac counties, the topography is quite rolling and in many parts too rough for agricultural purposes. The rolling character of the upland contributes to serious soil erosion.

The character of the soil and the topography of Area 9 prohibit an extensive type of farming in which grains and livestock are dominant, and the lack of large local population centers discourages intensive pro-

Table 27. — Livestock and Livestock Products per 1,000 Acres of Cropland and Pastureland, Area 9, 1950

County	Dairy cows	Beef cows	Steers and bulls	Brood sows	Ewes	Chickens	Milk sold (1,000 pounds)		Eggs sold (dozens)
							As milk	As butterfat[a]	
Jackson	34	9	11	17	5	616	61	50	3,431
Union	35	12	11	19	4	560	63	46	2,454
Johnson	24	25	11	14	3	582	8	38	2,984
Pope	24	16	20	14	26	631	6	19	3,305
Hardin	30	15	15	14	7	722	2	12	3,157
Alexander	14	8	7	17	2	448	5	20	1,581
Pulaski	27	14	25	28	3	658	37	26	2,948
Massac	28	11	19	23	4	837	44	14	5,122

[a] Calculated from Census figures on pounds of butterfat sold; figured at 4-percent butterfat.

duction of highly perishable products such as milk. As a result, much of the farming is on a small scale. In 1950, 43 percent of the farms were listed as noncommercial. The present trend is toward improved pastures and the use of the more rolling land for forests.

Farms by Economic Class

In the 1950 Census, farms were divided into economic classes based upon the value of all farm products sold, the number of days the operator worked off the farm, and the relationship of income received from nonfarm sources to the value of all farm products sold. Of the 195,268 farms in Illinois, 160,717 or 82 percent were classed as commercial, and 34,551 or 18 percent as noncommercial.

The commercial farms were divided into six groups on the basis of the total value of farm products sold, as follows (see also Fig. 19):

Class	*Value of farm products sold*	*Percent of Commercial farms*	*Percent of All farms*
I	$25,000 or more	4.3	3.5
II	$10,000 to $24,999	23.3	19.2
III	$ 5,000 to $ 9,999	30.2	24.8
IV	$ 2,500 to $ 4,999	20.7	17.0
V	$ 1,200 to $ 2,499	13.3	10.9
VI[1]	$ 250 to $ 1,199	8.2	6.9
		100.0	82.3

Obviously Class III with sales ranging from $5,000 to $9,999 is the largest. With the exception of a few counties in the extreme southern end of the state, the distribution of farms in this group is fairly even over the state. The higher-income farms are well distributed over the northern two-thirds of the state where favorable natural conditions are combined with larger acreages. The lower-income groups are concentrated in the southern third of the state where natural conditions are less favorable and farms are smaller.

The noncommercial farms, comprising 18 percent of all farms, included three groups: part-time, residential, and abnormal farms. Part-time farms made up 46 percent of the noncommercial group and included farms with sales like those in Class VI but with the operator working off the farm more than 100 days and with a nonfarm income greater than the farm income. Residential farms, representing almost 54

[1] Class VI was limited to farms on which the operator worked off the farm less than 100 days, and the income of operator and members of his family received from nonfarm sources was less than the value of all farm products sold.

percent of the group, made sales of less than $250. The abnormal farms, only 143 in number, included such farms as public and private institution farms and experiment station farms.

Noncommercial farms are found in all parts of the state. They are most prevalent in southern Illinois, particularly in the coal- and oil-producing areas and near the cities. Some of these farms are subsistence units; some are homes of retired or semi-retired older people who prefer to remain in the country rather than move to town; and some are homes of workers in nonfarm occupations. In this last group are the homes of many who work in the cities but live in rural areas and sell enough agricultural products so that their residences can be classified under the broad census definition of a farm.

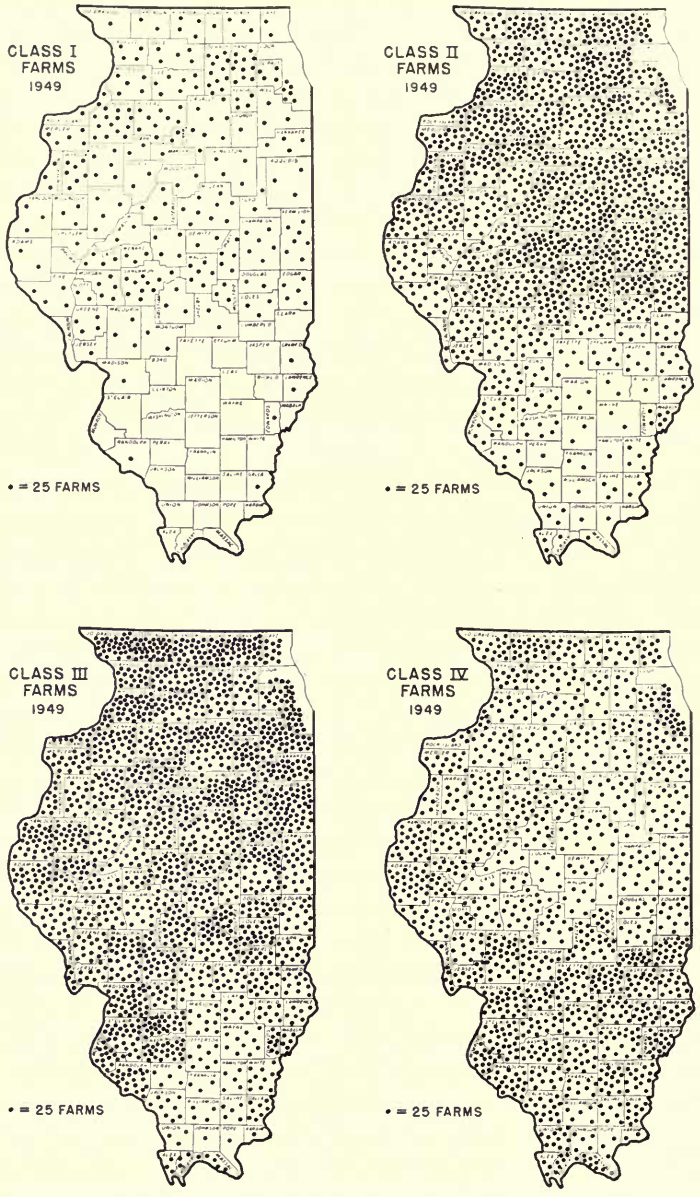
FIELD CROPS GROWN IN ILLINOIS

During the early settlement of Illinois, corn was the most important grain crop. It was easy to grow, readily stored, and furnished large quantities of feed for animals. It was also a staple of food for human beings. Meat, too, became an important agricultural product because transportation of meat — cattle and hogs could be driven to market — was easier than transportation of grain. Wheat was grown as food for human beings and was hauled long distances overland to waterway markets. In fact, in pioneer days, wheat was hauled by oxcart as far as 100 miles to reach water shipping points. With the establishment of mills for grinding grain, flour entered commercial channels in large quantities.

After 1860, great increases in land used for farming occurred in the prairie sections, especially in east-central Illinois. When drained, the rich soils in these areas were particularly well adapted to grain farming. Conditions were less favorable to livestock farming, because fencing and lumber for buildings had to be shipped in and were costly.

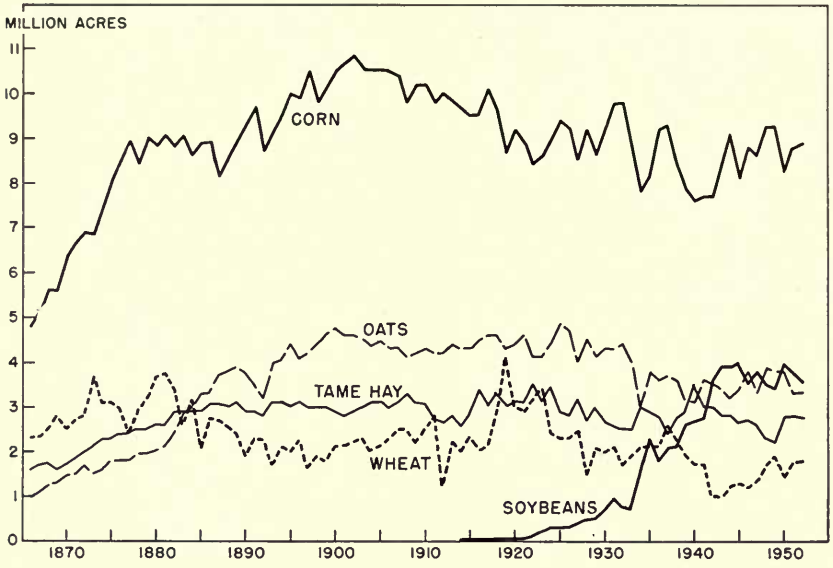
From 1860 to 1880, as drainage was begun on the prairie areas, the acreage of corn increased rapidly. From 1880 to 1900, as more and more land was drained, acreages of corn and oats increased, while there was some decline in wheat acreage. The most significant changes in the twentieth century have taken place since 1920. They include: (1) the addition of soybeans, legume forage crops, canning crops, and minor cash or feed crops to the cropping system, and (2) a tendency toward specialization with various crops becoming concentrated in areas best suited to their production.

The acreages of corn, oats, wheat, soybeans, and tame hay grown



Commercial farms were classified according to values of sales. Class I included farms with sales valued at $25,000 or more; Class II, $10,000 to $24,999; Class III, $5,000 to $9,999; Class IV, $2,500 to $4,999; Class V, $1,200 to $2,499; Class VI, $250 to $1,199. Class VI was limited to farms on which the operator worked off the farm less than 100 days and the income from nonfarm sources was less than the farm income. (Fig. 19)

Part-time farms included those on which the operator worked at nonfarm work more than 100 days and the nonfarm income was greater than the farm income. Residential farms made sales of less than $250. Part-time and residential farm groups accounted for more than 17 percent of all farms. (Fig. 19. — Concluded)



A number of changes occurred in the acreages of corn, oats, hay, and wheat during the period from 1866 to 1952. During the years 1920 to 1950, the acreage of corn changed but little; that of oats, hay, and wheat was reduced, while soybean acreage expanded remarkably. (Fig. 20)

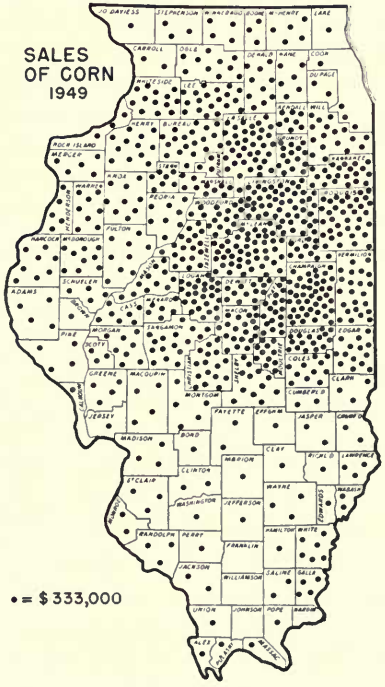
in Illinois annually from 1866 to 1952 are shown in Fig. 20. The total acreage of canning crops is not large in relation to the agriculture of the state, but these crops are intensively grown in communities near canning plants.

Corn

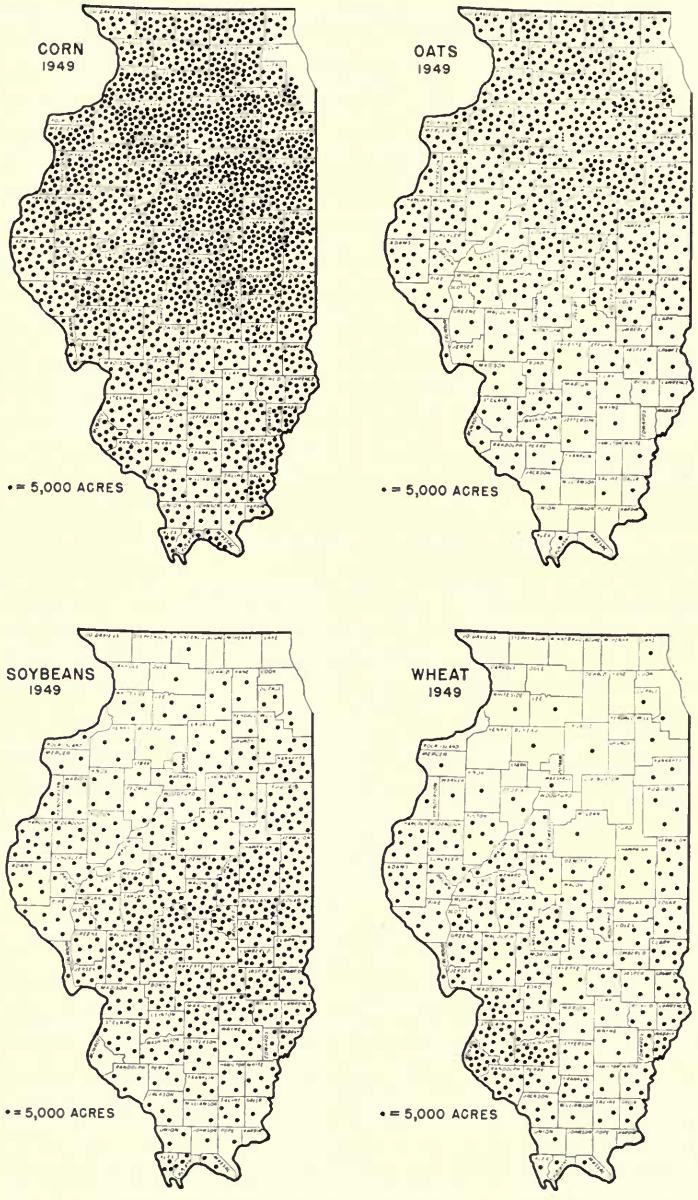
Corn acreage in Illinois reached a peak of more than 10,500,000 acres during the period 1900 to 1906 (Fig. 20). During the next twenty years the annual acreage slowly declined, reflecting in part the decline in the amount of farmland. Since 1920 the acreage has varied from 7,645,000 to 9,817,000. This slight downward trend probably results from competition with other crops. It has been most pronounced in areas where soybeans have expanded rapidly. Temporary variations have resulted from price conditions, production controls, and wartime expansion. In 1949 corn was harvested from 9,112,000 acres in Illinois, an area comprising 45 percent of the total cropland and 38 percent of all tillable land in the state. Only minor changes have occurred in the succeeding five years.

The farm value of the corn crop was equal to more than half the value of all crops in 1949; the income from sales of corn (Fig. 21) amounted to 48 percent of the income from sales of all crops. In livestock areas, much of the corn is sold to farms in the same county or nearby counties. The development of hard roads and truck transportation has led to a wide movement of corn from surplus to deficit areas, a major portion going to deficit feed states to the east and south.

The relative acreage of corn (Fig. 22), its value in relation to the value of all crops, and the proportion which is sold vary widely in different parts of the state. A distinct relationship exists between the acreage of corn and the character of the soil. Highest yields of corn are obtained on the dark-colored prairie soils, which are high in humus and nitrogen. Yields are also high in the northern counties of the state where less area is given to corn but where large amounts of manure are available from heavy livestock production.



Sales of corn from Illinois farms were heaviest in Area 4, the cash-grain farming belt. Much of the grain sold from the farms in the livestock areas is used by other farmers within the same region. (Fig. 21)



Corn is grown throughout the state, the heaviest production being in the east-central and north-central parts. Oats are important in the northern two-thirds of the state; soybeans, in the central and south-central parts; and wheat, in central Illinois, in counties next to St. Louis, and in the Wabash river valley. (Fig. 22)

Total rainfall is sufficient over the entire state for good corn yields, but periods of low rainfall do occur during the growing season and often limit corn production. The ability of corn to withstand drouth depends to a large extent on soil conditions. The development of varieties of hybrid corn has contributed to corn yields throughout the state and has reduced the amount of frost damage, especially in the northern counties.

The relative acreage of corn is greatest in the east-central part of the state where, in 1949, 40 to 50 percent of the tillable land area was in corn. Corn is chiefly a cash crop in this area; 65 to 80 percent is shipped out of the county in which it is grown. A number of counties in north-central and west-central Illinois have from 35 to 45 percent of the cropland in corn. In this area where corn is used almost entirely as a feed crop, large acreages are cut for silage. From 18 to 35 percent of the cropland in the south-central and southern parts of the state is normally in corn, and nearly all of it is fed to livestock.

The light-colored poorly drained soils of southern Illinois are not suitable for extensive corn growing without heavy applications of fertilizers. The amount produced is sufficient only to provide feed for limited numbers of work stock, beef cattle, dairy cattle, poultry, and hogs. Many farms purchase additional feed.

Corn is the most important crop on the bottomlands along the rivers in all parts of the state. Along the Wabash and Ohio rivers in southeastern Illinois are small areas where as much as 40 percent of the cropland is in corn and from which corn is frequently sold to farmers in neighboring upland areas.

Oats

The acreage of oats increased until 1900 and then held fairly steady at more than four million acres until 1932 (Fig. 20). During the last 20 years, production has averaged about three and one-half million acres, the greatest decreases being in those parts of the state having the largest acreages of soybeans. In 1949, oats occupied 3,709,000 acres or 18 percent of the harvested cropland, and 16 percent of the tillable land. In the next five years, the acreage of oats was reduced more than 15 percent.

The importance of oats is due more to their value in crop rotation than as a cash crop or feed crop. Oats are sown before work on corn and soybeans is started and are harvested after most of the corn cultivation is completed. They are an excellent nurse crop for hay and

pasture seedings, and since they are a spring-sown crop, they follow corn better than does wheat.

Oats are choice feed for dairy cattle and for growing young stock, but the amount of feed produced by an acre of oats is less than half that realized from an acre of corn. The farm value of the oats crop was only 9 percent of the value of all crops in 1949.

The east-central and northern parts of the state have the greatest acreages of oats (Fig. 22). Grown in a cropping system with corn and soybeans as the major crops, oats usually occupy less than 20 percent of the cropland in counties growing a large acreage of soybeans, but above 20 percent in counties north of the heavy soybean areas. Their value as a feed crop for dairy cattle makes them an important crop in northern Illinois. Since oats grow best in areas where the soil and climate are both cool and moist, they are not an important crop in southern Illinois although winter oats are being used to a limited extent.

Wheat

Cropland planted to wheat reached a peak of more than three million acres in Illinois about 1880, declined to two million acres during the period from 1890 to 1905, then increased gradually until the demand created by the first world war brought it to a high peak of over four million acres in 1919 (Fig. 20). By 1930 it had declined again to two million acres, and then averaged about one and one-half million acres from 1940 to 1950. The area harvested in 1949 was 1,849,000 acres, or 9 percent of the harvested cropland and 8 percent of the tillable land; nearly all of it was in winter wheat. The value of all wheat harvested was only 7 percent of the value of all crops. During World War II, the acreage of wheat was reduced sharply because of the emphasis on feed crops. After the war, production nearly regained its prewar level and amounted to 9 percent of the harvested cropland. However accumulation of surpluses during the years 1949 to 1954 led to a 17 percent reduction in wheat acreage.

Wheat is grown mainly in the central and southern parts of the state, but is especially important in the southwestern counties (Fig. 22). From 25 to 35 percent of the cropland in five counties in the St. Louis area was grown to wheat in 1949. A few counties in south-central Illinois in the Wabash valley had 15 percent of the cropland in wheat.

The kind and amount of wheat grown is influenced by soil and climatic conditions as well as by competition with other crops. Production of winter wheat in the northern part of the state is hazardous

because of winterkilling. The same risk is involved in central Illinois to some extent, particularly on the heavier types of soil. Where corn is grown on 40 percent or more of the harvested cropland, wheat does not readily fit into the rotation.

Soybeans

Soybeans are grown throughout the central part of the state but are most prevalent east of the Illinois river in a belt having as its northern boundary a line from Kankakee county to Cass county and as its southern boundary a line from Wabash county to St. Clair county (Fig. 22). Soybean acreage increased from a few thousand acres before 1920 to 3,287,000 acres in 1949 and to 4,064,000 acres in 1954. The major increase took place during the early years of World War II in response to wartime demands for vegetable oils and protein feeds (Fig. 20). Large quantities of soybean meal were converted into flour for use as food for human beings. Between 1949 and 1954 a strong increase in demand led to a sharp expansion in acreage of soybeans, which displaced an equivalent acreage of oats and wheat.

In 1949, soybeans occupied 14 percent of the harvested cropland and 12 percent of the tillable land in the state. In the heaviest-producing counties, 20 to 26 percent of the cropland was devoted to soybeans. Within the heavy-producing counties, the acreage of soybeans on the light-colored soils was considerably less than that on the dark-colored soils. In a number of counties in southern Illinois the acreage of soybeans exceeded the acreage of corn on the light-colored soils.

Certain characteristics of soybeans have influenced their acreage and their distribution. Soybeans grow well on soils that are too acid to grow alfalfa or clovers and are therefore popular in the southern half of the state. Their adaptability to poorer soils has made them a relatively profitable grain crop in south-central Illinois also. On the fertile soils of east-central Illinois where the yield is high and profitable, they have sometimes replaced oats and even corn in the rotation. The fact that soybeans are usually planted later than corn and harvested ahead of it helps to spread out the field work on crops.

Today most of the soybeans grown in Illinois are harvested for grain, although they are sometimes used as an emergency hay crop when the alfalfa or clovers do not survive the winter. Soybean-oil factories, which are distributed every 40 to 50 miles throughout the soybean area, have been the principal market for the grain.

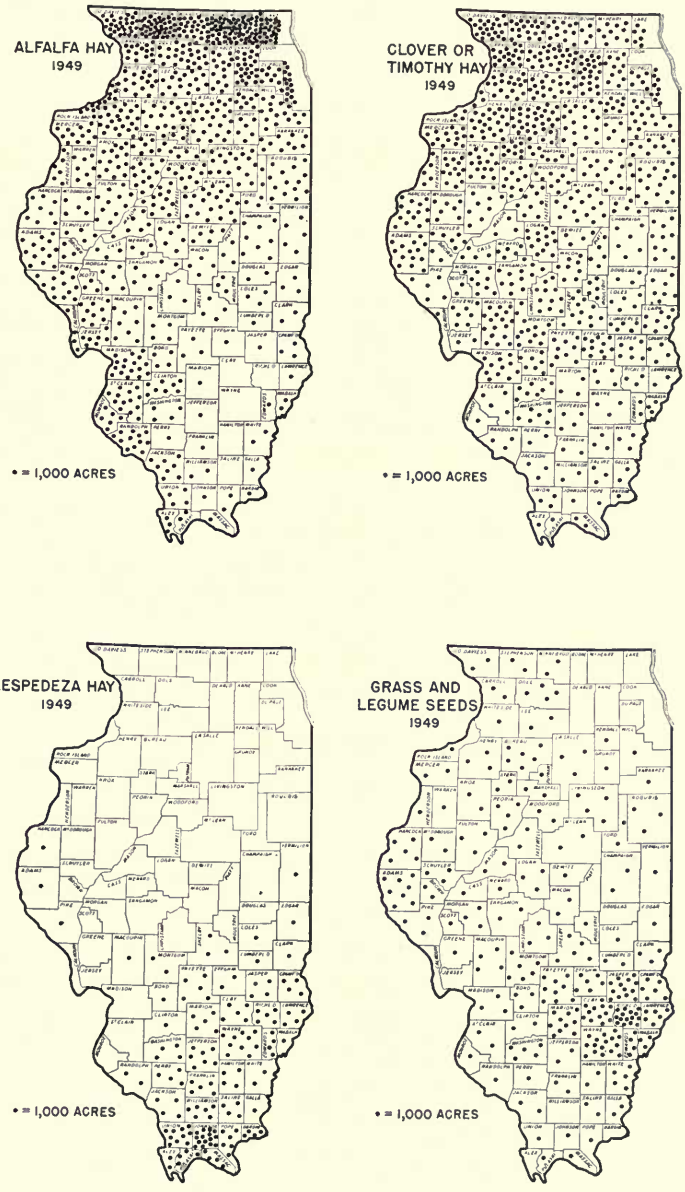
Hay and Pasture Crops

Twenty-nine percent of the farmland in Illinois was in hay or pasture crops in 1949. Nearly one-half of this land was in pasture because it was either woodland pastured or land too rough for cultivation. Hay was harvested from 2,010,000 acres in 1949 and 2,591,000 acres of tillable land were used for pasture, the total area occupied by these two crops making up 19 percent of all tillable land. In 1954, hay was harvested from 2,925,000 acres. The proportion of all pasture that is tillable is greatest in east-central Illinois where the relative acreage of all pasture is smallest (Fig. 13 on page 30). However acreage in pasture gives little indication of the amount of feed produced. The carrying capacity depends on soil conditions, on the type of pasture, and on methods of management. The acreage of meadow harvested for hay varies from less than 5 percent of harvested cropland in east-central Illinois to more than 20 percent in some northern counties.

Excluding soybeans, cowpeas, and sorghum cut for hay, hay was harvested on 57 percent of all farms reporting. More than half of this group reported alfalfa and nearly half reported clover and timothy cut for hay. These two crops comprised 84 percent of the hay acreage. Smaller acreages of lespedeza, small grains cut for hay, and other kinds made up the remainder. The average yield of alfalfa was reported as 2.3 tons per acre, and clover and timothy as 1.3 tons.

Alfalfa is grown quite widely in the state, but most intensively in the dairy sections of northern Illinois and in the counties next to St. Louis (Fig. 23). The acreage of alfalfa was more than four times as great in 1950 as in 1930. Lespedeza, while making up only 8 percent of the hay acreage, is dominant in a limited area in southeastern and extreme southern Illinois. Clover or timothy is distributed over the state but is heaviest in the livestock area west and north of the Illinois river, and in a belt extending across south-central Illinois. Sweet clover, which was popular after 1925, is giving way to alfalfa, bromegrass, Ladino clover, and mixtures of these and other hay crops. The sweet clover weevil has caused the decline of sweet-clover acreage even though no other legume is equal to sweet clover as a soil builder.

Annual legumes harvested for hay consist of soybeans and cowpeas. In 1949, less than 4 percent of the soybean acreage and about 50 percent of cowpea acreage were used in this way. The use of these legumes for hay varies from year to year, depending upon the extent of winter-killing of the biennial and perennial hay crops. Other hays, amounting to only 7 percent of the hay acreage, include redtop, bromegrass, Sudan grass, sweet clover, and any wild grass.



Alfalfa was the leading hay crop in 1949, followed closely by clover, timothy, or a combination of the two. Lespedeza was grown extensively in southern Illinois where soils are acid. The production of grass and legume seeds centered in Area 7. (Fig. 23)

The widespread use of legume hays and pastures meets the urgent need on many farms for leguminous roughages for livestock and is associated with the expanding program of liming, which has been important in the soil-building plans of the state.

Grass and Legume Seeds

In 1949, grass and legume seeds were harvested from 310,000 acres in Illinois, an area which constituted 1.5 percent of the harvested cropland (Fig. 23). Red clover made up 51 percent of the total acreage of grass and legume seeds; redtop, 24 percent; lespedeza, 10 percent; and timothy, 7 percent. Clover seed was harvested, however, on less than 6 percent of the farms in the state; redtop on less than 2 percent, and other grass seeds on 3 percent.

More than 80 percent of the redtop seed was produced in Richland, Wayne, Clay, Marion, Jasper, and Fayette counties, but the acreage in 1950 was only about one-fourth as great as in 1940. The fertilization of redtop has resulted in marked increases in the yield of seed. Clover-seed production is fairly evenly distributed over the state except for the northeast corner and the southern part, where little or no seed is produced.

Other Field Crops

The crops that have been discussed occupied over 98 percent of the harvested cropland in Illinois in 1949, and the income from their sales equaled 89 percent of the cash income from all crops for the five years 1947-1951. Other field crops, excluding vegetables and fruit, are grown on a relatively small area in Illinois but are, or have been, important in certain localities and on many individual farms. These are broomcorn, cowpeas, sunflower seed, rye, barley, cotton, popcorn, sorghums, sugar beets, and mixed grains.

Table 28. — Acreages of Minor Field Crops in Illinois

	1949	1939	1929
Barley	38,116	127,687	369,903
Broomcorn	4,640	27,709	21,403
Cotton	3,752	4,222	1,613
Cowpeas	49,668	177,299	106,359
Grain sorghum	4,083	19,309	2,163
Popcorn	17,738	8,176	1,200
Rye	53,293	79,926	62,051
Sugar beets	2,390	2,250	969
Sunflower seed	715	287	13,567
Sweet sorghum	273	1,714	2,063
Mixed grains	27,485	19,790	92,220

The trends for these crops are best shown by listing total acreages in 1929, 1939, and 1949 (Table 28). Acreages of barley, broomcorn, cowpeas, sunflower seed, sweet sorghum, and mixed grains have been reduced sharply, while only popcorn and sugar beets have increased steadily.

Horticultural Products

Horticultural products may be divided into two classes: those grown for commercial markets and those grown for use at home. They include fruit, vegetables, and horticultural specialties. While horticultural products are a minor commercial enterprise for the state as a whole, representing a little more than 3 percent of farm income in 1949, they are very important in the limited areas in which they are concentrated. They are, of course, widely grown for home use.

Fruits. The orchard fruits — apples, peaches, pears, cherries, and plums — are produced in all parts of the state. Apples are most common, being reported on 33 percent of the farms in 1949. Peaches were grown on 26 percent of the farms, cherries on 21 percent, pears on 18 percent, and plums on 11 percent. Less than one-third of 1 percent of the land in harvested crops in Illinois was occupied by orchards in 1949, and the value of the fruit was a little more than 1 percent of the value of all crops. The 1950 Census did not list acreages of home orchards of less than one-half acre.

Commercial production of these fruits is limited to relatively few farms in selected areas, mostly in southern and west-central parts of the state (Fig. 24). Production of the major fruits has been declining sharply since 1930.

Fruit production, like other types of farming, is becoming more specialized. The large orchards are maintained in better condition than the smaller ones, most of which have been badly neglected. Improved varieties and strains as well as technological developments have doubled the yield per tree in the last twenty years, but this enlarged yield is not enough to offset the decline in tree numbers. The increase in yield per tree has resulted largely from the concentration of orchards in the hands of experienced operators.

Apples. The number of apple trees in Illinois has declined steadily during the past fifty years. Most of the decline before 1930 was due to the abandonment of small farm orchards. Since then the number of trees in existing orchards has diminished and fewer young trees are being planted. From 1930 to 1950 the number of apple trees of all ages

declined 70 percent; in 1950, 23 percent of the trees were under bearing age while in 1930, 32 percent of the trees were too young to bear.

Much of this reduction resulted from the severe freezes while the sap was still in the trees in the winters of 1949-50 and 1950-51. In 1954, apple trees of all ages numbered 904,000 or one-sixth the number in 1930.

During the ten-year period 1943-1952, the commercial apple crop in Illinois, coming mostly from two major areas of production, varied from 2,184,000 to 4,030,000 bushels and averaged 2,986,000 bushels per year. The western area, which includes Calhoun, Jersey, Greene, Pike, and Adams counties, accounted for 27 percent of all apple trees in 1950; the southern area, including Union, Johnson, Jackson, and Williamson counties, accounted for 19 percent of the trees of all ages.

Peaches. The number of peach trees in Illinois declined sharply during the past 25 years. In 1930, the number was 4,027,000; in 1950, 1,524,000; and in 1954, 653,000. The recent decline can be attributed to the freezes in the winters of 1949-50 and 1950-51 which killed many trees and severely damaged many others.

In peach production, as in apple production, the larger orchards have been maintained in better condition, yields per tree have increased, but total production has declined. Production varies greatly from year to year because of weather hazards and because of the reduction in tree numbers. During the ten-year period 1943-1952, production varied from 224,000 to 2,548,000 bushels, with an average of 1,590,000 per year.

Two areas have long been important in peach production. The Centralia area, including Marion, Fayette, Clinton, Washington, Jefferson, and Franklin counties, had 32 percent of all trees in the state in 1949. This area suffered most in the winter of 1949-50. The Anna area centers in Union county and adjoining Jackson, Johnson, and Pulaski counties.

Pears. Pears are produced in all parts of the state, but the crop is of commercial importance on only a few farms. Thirty percent of the pear trees were reported in Marion county in 1950. The number of trees in the state declined 67 percent from 1930 to 1950. During the ten years 1943-1952, the crop varied from 151,000 to 335,000 bushels and averaged 226,000 bushels per year.

Plums and cherries. Although plums and cherries are produced in all parts of Illinois, they are of little commercial importance except in local trade. From 1930 to 1950 the number of plum trees declined 56

percent, and of cherry trees, 41 percent. In 1950 plums were reported on 11 percent of the farms in the state, and cherries, on 22 percent.

Grapes. The number of grape vines has declined, the number reported in 1950 being 27 percent of that in 1930. The vines in Hancock county, the only important commercial area in the state, represent 29 percent of the total. Twenty-one percent of the farms in this county reported grapes, and the average per farm reporting was 265 vines.

Apricots. Unlike the other fruit trees described, the number of apricot trees has increased nearly three times since 1940. They are grown in limited numbers in all parts of the state for local consumption.

Vegetables. Seventy percent of the farms in the state reported vegetables grown for home use in 1949, and 3 percent reported vegetables harvested for sale. The number of farms in the commercial group was less than half as many as there were in 1930, but the acreage was 10 percent greater. Vegetables other than Irish and sweet potatoes were grown on 130,260 acres in 1949, and sales exceeded 14 million dollars. The acreages of vegetable crops are not large enough to affect the prevailing type of farming, and yet they occupy an important place in the cropping system on many farms and contribute significantly to farm income.

The distribution of vegetables harvested for sale is shown in Fig. 24. In the Chicago area, and in Peoria, Tazewell, Madison and St. Clair counties, vegetables are produced largely for immediate consumption in nearby population centers. In Union county they are grown largely for immediate consumption in distant markets. In Iroquois, Vermilion, Ford, and Woodford counties in the central part of the state, and in Boone, DeKalb, Kane, Ogle, Lee, and Carroll counties in the northern part, large acreages of vegetables are produced exclusively for canning or freezing.

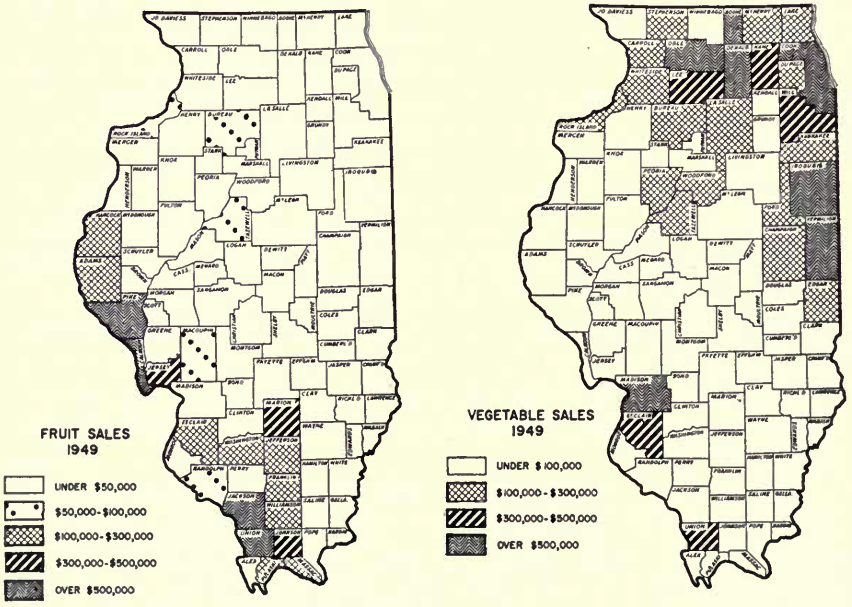
In Illinois, sweet corn, green peas, tomatoes, and asparagus are the chief vegetable crops grown for processing. Vegetables grown most extensively for fresh market use are sweet corn, cabbage, onions, watermelons, carrots, snap beans, and cantaloupes. Sweet corn makes up more than half of the total acreage of vegetables for sale, green peas made up 14 percent, tomatoes 9 percent, and asparagus 5 percent.

White potatoes were harvested from 5,480 acres on 49,080 Illinois farms in 1949. Most of this acreage represents production for sale, since acreages were not recorded on farms on which less than 15 bushels were produced.

Sweet potatoes were harvested from 1,000 acres on 10,900 farms in 1949. Nearly two-thirds of the total acreage was in the extreme southern part of the state, half of the acres being reported for Union county alone.

Horticultural specialties. Horticultural specialties include cut flowers and flowering or foliage plants, whether grown in the open or under glass, in nurseries, on bulb farms, or on flower-seed farms. Sixty percent of the sales of these products were centered in Cook county and adjoining counties in 1949. Much of the remainder was located near the smaller cities.

The production of horticultural specialties is an intensive enterprise, and the number of farms and the total acreage involved are small. In 1949, less than 1.5 percent of the farmers in the state reported such sales; yet the income from them amounted to 4 percent of all crop sales.



Fruit was sold mostly in the southern and western parts of the state. Vegetable sales were heaviest near large population centers and in the northern half of the state where vegetable crops are grown extensively for canning and freezing. Sweet corn, green peas, and tomatoes represented three-fourths of the acreage. (Fig. 24)

LIVESTOCK PRODUCTION IN ILLINOIS

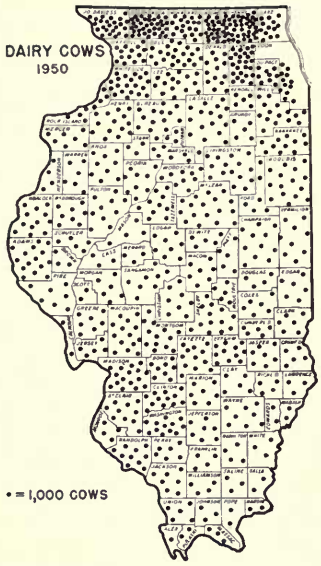
Livestock holds an important place in Illinois agriculture. Feed and pasture crops are grown on more than three-fourths of the farmland in the state, and a large part of these crops is fed on the farms where they are produced or on other farms in the same region. Much livestock purchased from the West is fed in Illinois until ready for market. Sales of livestock and livestock products make up 60 percent of all agricultural sales, and the meat, dairy, and poultry products consumed in the farm home represent an appreciable part of the non-cash income of the family. The value of all livestock on farms on April 1, 1950, was estimated at $564,483,000, or $2,890 per farm. Sales of livestock and livestock products in 1949 amounted to $986,129,000 or $3,949 per farm.

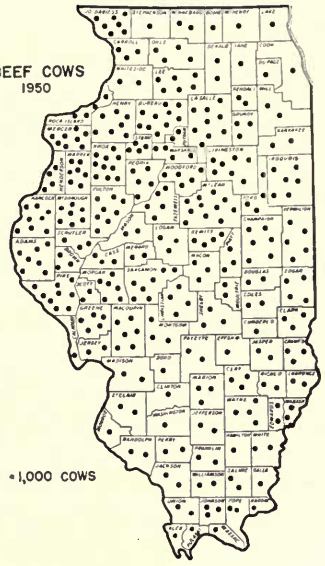
Few farms have less than two kinds of livestock contributing to the cash income or providing food for the farm family. Nevertheless livestock is not of equal importance in all parts of the state, nor does each kind of livestock play the same part in the various livestock organizations on farms in all areas. The differences that exist are due chiefly to local conditions, such as soil type, topography, pasture and crop combinations, and to market influence.

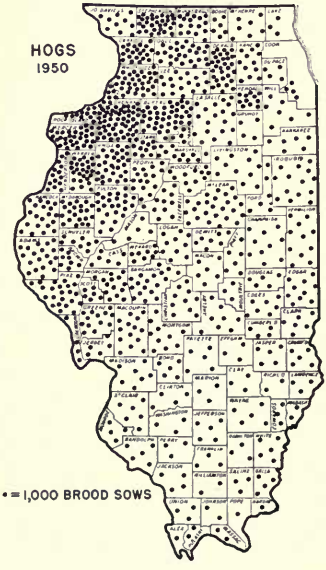
Dairy Cattle

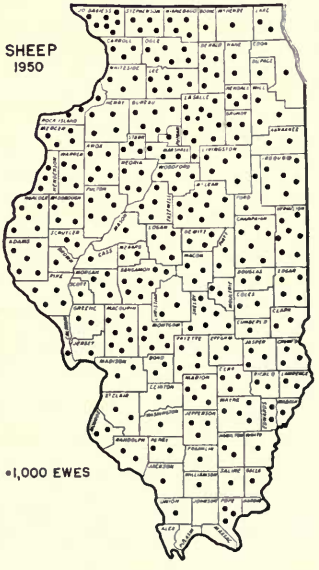
With the exception of poultry, dairy cattle is the most common class of productive livestock kept on Illinois farms (Fig. 25). Cows are kept mainly for milk on 74 percent of all farms. The number of cows per farm, however, and the form and quantities of dairy products sold vary greatly. On some farms dairy cows are kept only to supply milk, cream, and butter for the farm family. On many others the dairy enterprise is relatively small but sales of dairy products, principally milk or cream, make up an appreciable part of the total farm income. In some parts of the state, and on a few farms in nearly all parts, dairying is a major enterprise and is the principal source of income. Whole milk is usually sold from these farms, either for daily consumption or for processing in condenseries or cheese factories.

There were 909,000 milk cows in Illinois on April 1, 1950, but numbers declined over the next five years. Although the number of milk cows in the state changed little from 1920 to 1950, the average production per cow increased from 4,650 pounds in 1930 to 5,630 pounds in 1950. In 1950, 71 percent of the milk produced in the state was sold as fluid milk and 14 percent as cream. Farms selling whole milk are found near all cities; cream is sold in varying quantities in all parts of the state. In proportion to the total farm income, sales of









The maps above represent breeding animals and do not include young animals being raised for market or for replacements in the breeding herds, nor do they include feeder stock shipped in from other states.

(Fig. 25)

cream are greatest in the southern part of the state, although the largest amounts of cream are sold in the south-central and western parts. Sales of dairy products, generally, are lowest in east-central Illinois.

Beef Cattle

The number of all cattle other than milk cows in Illinois was a little more than two million head in 1950, and numbers increased rapidly during the next five years. This represents a marked increase from 1.4 million head in 1930 and again in 1940. Rising prices during the 1940-1950 period encouraged the increase in beef-cow herds in all parts of the state.

Beef cattle are most important in the area west of the Illinois river extending north to the Wisconsin line. Topography in this region is such that a considerable part of the land can be used only for pasture. Most of the soils produce good yields if properly handled, but pasture and hay are usually necessary to maintain yields and to control erosion. Beef-breeding herds are also numerous in the area east of the Illinois river in the south-central part of the state, and an increasing number of herds have been established on the light-colored soils in southern Illinois in connection with the grass-legume program (Fig. 25). Beef-breeding herds are usually found on farms with a large proportion of untillable land or land which for other reasons must be left in pasture and hay. However, many small beef herds have been established in grain-farming areas.

The purchase of feeder cattle, in which calves or steers are secured either locally or from distant markets, is most common through the area extending from McDonough county to Henry and Bureau counties and up into DeKalb county. Feeder cattle may be calves or light or heavy steers; they may be fed only a short time or for a period up to one year. Usually this type of cattle-feeding is found on farms where nearly all the land is in crops, but where some pasture is used to carry light feeders through the summer and the fall. A limited amount of grain feeding may or may not be combined with pasture. While cattle-feeding is predominant in the areas mentioned, some cattle-feeding is scattered over all the main corn-producing areas.

Hogs

Hog sales made up 39 percent of the cash income from livestock during the five-year period 1947-1951. Hogs are not found on as many farms as dairy cattle, but they are a major enterprise and an important

source of income on a much greater proportion of the farms. In fact, they bring a larger amount of the cash income than any other class of livestock. The hog business thrives where large quantities of concentrated feed, particularly corn, are raised. It is often combined with cattle enterprises. For example, in the northwest part of the state where beef cattle are fed, hogs salvage feed which otherwise would be wasted, and on farms where much cream is sold, the skimmilk is fed to hogs.

The number of hogs varied from year to year with changes in the price of hogs, corn, and beef cattle. From 1935 to 1944 and from 1948 to 1952, there was a general tendency to increase hog production, but after 1952, production declined until 1955 when it rose again.

Usually pigs are raised and finished for market on the same farm, although some feeder pigs, about 1 percent of the total marketed, are shipped in. Brood sows bred to farrow in the spring of 1950 were reported on 60 percent of the farms (Fig. 25). In McDonough county and in several counties farther north, hogs were reported on 70 to 82 percent of the farms; and 13 to 21 sows on each farm were reported as farrowing in the spring. From McDonough county south to Pike county and east to Sangamon county, an average of 9 to 12 brood sows bred to farrow in the spring was reported on 65 to 75 percent of the farms. However, the number of sows bred to farrow in the spring does not accurately indicate the number of pigs raised in these two areas because the proportion of farms on which two litters of pigs are raised each year is greater in the southern part of the area than farther north.

Sows were reported on 50 to 60 percent of the farms in east-central Illinois in 1950; the average number per farm in most counties was from 5 to 7. In the southern part of the state, an average of about 3 sows on each farm was reported on about half the farms in most counties; in a few counties in southern Illinois where corn is an important crop, sows were reported on more than half the farms.

Sheep

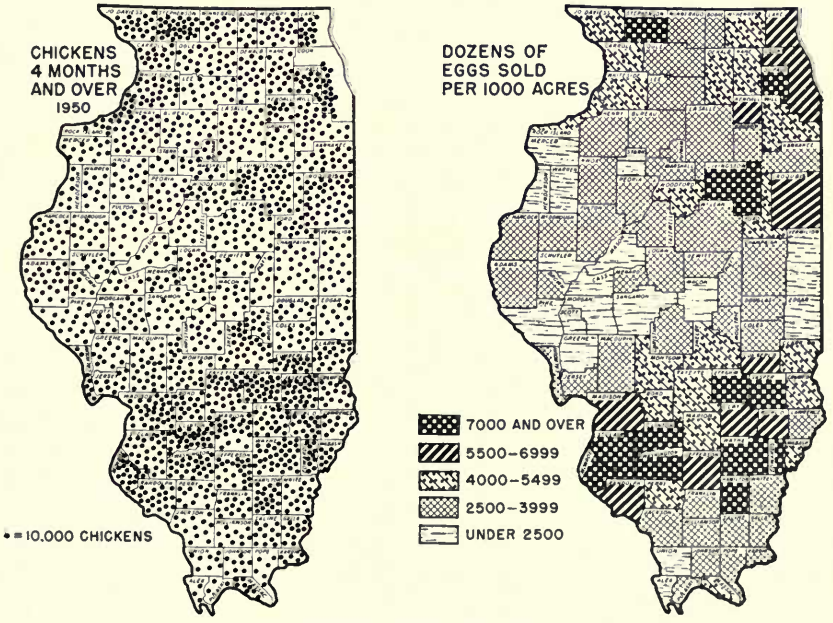
During the five-year period 1947-1951, the sales of sheep, lambs, and wool made up less than 2 percent of the income from livestock. Sheep were reported on only 11 percent of the farms in 1950, and on those farms there was an average of only 15 ewes per farm. The number of farms with ewes had declined 42 percent since 1930. In general, the raising of sheep is of most importance in areas where there is a high percentage of untillable land and other low-grade pastureland, and

where the production of concentrated feeds in proportion to pasture crops is not great enough to feed beef cattle (Fig. 25). However, few sheep are found in the southern quarter of the state.

Lambs are fed on a few farms throughout the heavy corn-producing and oat-producing areas. During the five years 1946-1950, enough feeder lambs and sheep were shipped into the state to account for 30 percent of the stockyard sheep receipts from Illinois. Most of these sheep and lambs were fed at a few large feeding stations in DeKalb and Kane counties.

Chickens and Eggs

Poultry has become a major enterprise on an increasing number of farms. In 1950 chickens over four months of age were reported on 83 percent of all farms in the state (Fig. 26). During the five years 1947 to 1951, the sales of poultry and eggs made up 11.3 percent of the sales of all livestock and livestock products. In addition about one-fourth of the eggs produced and a large number of the chickens raised were con-



Poultry is a major enterprise in the south-central part of the state where an average of more than a thousand hens is kept on each thousand acres of cropland and pastureland. Sales of eggs and farm chickens were nearly 80 percent of all income from poultry in 1950. (Fig. 26)

sumed by farm families. Even though during the years 1930 to 1950 the number of farms reporting chickens declined 20 percent, the number of chickens on hand, 21 percent, and the number of farms reporting egg sales, 28 percent, the total number of eggs sold in 1950 showed an increase of 11.5 percent. These figures reflect a sharp rise in egg production per hen.

Poultry is a major enterprise in the south-central part of the state where an average of more than a thousand hens is kept on each thousand acres of crop and pastureland (Fig. 26). In the central and northern parts of the state, poultry is a minor enterprise. On most farms in this area eggs and chickens are produced primarily for family consumption even though some communities, notably in Livingston, Iroquois and Ford counties, have developed egg production into a substantial source of cash income.

The importance of the poultry enterprise in southern Illinois is emphasized even more when the income from sales of poultry and eggs is considered in relation to the total farm income (Fig. 26). Sales of poultry and eggs per farm are not only much larger in southern Illinois than in central and northern Illinois but they make up 10 to 12 percent of the total sales from the farm; less than 5 percent of the total income in the central and northern parts of the state is derived from poultry and egg sales. Broiler production has been introduced in widely scattered areas of the state in recent years.

In all phases of poultry production, efficiency has been increased through improved methods of feeding, breeding, and disease control.

Other Poultry

Comparatively few turkeys, geese, and ducks are raised in Illinois. Turkeys were reported on only 2 percent of the farms in 1950, but the average number per farm was 200. In 1930, turkeys were reported on 3 percent of the farms, but the average number per farm was 14. In 1950, ducks were reported on 5 percent of the farms and geese on 2 percent. Turkeys, ducks, and geese are important on a few specialized farms, but on other farms where they are found, they contribute only a small part to the total farm income.

Horses and Mules

Today there are fewer than one-fourth as many horses as there were 20 years ago. In 1950, less than half of the farms in the state reported horses or mules. On the farms reporting, the average number

of horses and colts per farm was 2.4 and the total for all farms was 195,000. Mules and mule colts numbered 17,500, or 2 per farm reporting. The heaviest concentration of horses and mules was in the southern third of the state where the farms are small and much of the land is rough; fewer horses and mules were found in the chief livestock and dairy areas, and the fewest in the cash-grain belts. In 1950, only 22,000 farms (11 percent) depended solely on horses and mules and reported no tractor. Numbers of horses and mules continued to decline from 212,000 in 1950 to 83,000 in 1954.

Goats

Goats were reported on slightly more than 1 percent of the farms. Sales of milk and other products were centered in the dairy area next to Chicago. Goats are kept on some farms to utilize brushland that cannot be used for any other purpose.

Bees

Bees were reported on 3 percent of the farms. These farms were widely distributed over the state, and an average of 343 pounds of honey was produced per farm reporting.

TWENTY YEARS OF CHANGE IN ILLINOIS AGRICULTURE

While striking changes do occur in the agriculture of a state, most of them occur so gradually that they attract little current attention. During the twenty-year period 1930 to 1950, the usual rate of change was accelerated by the depression of the thirties and the wartime conditions of the forties, and this accelerated rate often caused a temporary imbalance. Marked changes occurred in Illinois.

The rising price level from 1940 to 1950 increased sharply the investment in all kinds of farm property, the price of farm products, and the cost of farm operations. The number of farms in the state declined 9 percent, and while the total area of land in farms decreased slightly, the size of the average farm increased from 143 to 159 acres. As a consequence, the number of smaller-sized farms was reduced and that of the larger-sized farms increased. This trend continued at an accelerated rate between 1950 and 1954, during which time the number of farms decreased by 10 percent and the average size increased to 173

acres. Land in farms continues to diminish as land is taken over for urban development, highways, recreation, and other uses. From 1950 to 1954 land in farms diminished by 580,000 acres or nearly 2 percent.

The proportion of tenant farms decreased from 43 percent in 1930 to 35 percent in 1950. The tendency, however, was for part-owners and tenants to increase their acreages more rapidly than full-owners. Therefore it is probable that the acreage under tenant operation today is greater than that of 1930. Cash tenancy, however, declined from 21 percent of all farms rented to 11 percent in 1950 and to less than 9 percent in 1954.

Mechanization brought great changes to farming. Between 1930 and 1950 the number of farms with electricity multiplied five times. The number of tractors and trucks on Illinois farms more than doubled, and the number of horses and mules decreased 78 percent. Although the number of farms declined 10 percent within the period 1950-1954, the number of combines increased 12 percent; corn pickers, 13 percent; and pickup hay balers, 19 percent. Many changes also took place in the design and capacity of farm machinery. These changes increased the capacity of each farm worker, permitted more timely operations, stimulated those enterprises which could be most completely mechanized, and retarded those which could not. In addition, these changes definitely increased the dependence of farmers upon other groups, and raised the proportion of farm expenses which must be paid in cash.

Since 1930 the Soil Conservation Service was established as well as the payments of subsidies for certain conservation practices under the direction of governmental agencies. The use of long-range soil-building materials, limestone and rock phosphate, became more common, and fertilizers of many kinds were applied at increasing rates. Erosion-control measures and improved rotation systems were also more widely used.

Total production of crops expanded. Mechanization played an important part, and so did improved varieties, the greater use of fertilizers and soil-building materials, erosion control, and acreage adjustments among individual crops. Hybrid seed corn, which increased yields 25 to 30 percent, illustrates how the improvement of seed contributed to expansion. Better varieties of soybeans, small grains, and minor crops were also developed.

The shift in the importance of crops was most pronounced in soybeans, which increased from 496,000 acres in 1930 to 3,287,000 acres in 1950 and to 4,064,000 acres in 1954. They became a major crop in about half of the state. Simultaneously with the expansion of soybeans,

there occurred a reduction of 7 percent in the acreages of oats and winter wheat, 23 percent in that of hay, and almost complete disappearance of the minor crops — barley, spring wheat, cowpeas, and broomcorn.

Hay production also reflected much change. Acreage of alfalfa increased from 201,000 acres in 1930 to 861,000 in 1950, and to 1,280,000 acres in 1954, making alfalfa a leading hay crop. This increase may be attributed in part to alfalfa's resistance to drouth. Clover or timothy, or a combination of the two, came second although these crops were grown on only 57 percent of the acreage occupied by them in 1930. Lespedeza, grown chiefly in southern Illinois, came third. However, between 1950 and 1954, drouth conditions in southern Illinois cut the acreage of lespedeza severely. Various new hay and forage mixtures were introduced, and the use of grass silage increased the feeding possibilities of forage crops.

Among the horticultural products, the acreage of vegetables grown for sale changed but little, but some shifts occurred in the proportions of crops making up the total acreage. Numbers of fruit trees continued the long downward trend evident since 1900. The most recent sharp reduction, especially in apple and peach trees, resulted from severe freezes in the winters of 1949-50 and 1950-51. Yields per tree, however, increased with more specialization in production.

Production of the various species of livestock tended to run in alternating cycles of increasing and decreasing numbers. The total of 2.3 million head of cattle in 1930 was near the low point of a cycle. By 1950 the total had increased to 2.9 million head and continued to increase through 1954. This increase in numbers was almost wholly in beef cattle. Some increase both in beef-cow herds and in feeder cattle took place in all farming-type areas where dairying was not a major enterprise, but increases were most pronounced in the beef-feeding areas, the old boundaries of which were expanded by the change. Dairy-cattle numbers declined generally outside the major dairy areas. Within these areas the number of dairy cows increased, and tended to be concentrated in larger herds on fewer farms. Average milk production per cow in Illinois increased from 4,650 pounds in 1930 to 5,630 pounds in 1950.

Hog production was on a materially higher level in 1950 than in 1930. Hog numbers are susceptible to rather rapid change since they can be increased or decreased quickly in response to price changes. The lowest production during these two decades was in 1934, and the highest in 1943, under stimulus of the war demand. While hog pro-

duction in 1950 was nearly one-fourth lower than in 1943, sows on Illinois farms were 65 percent more numerous than in 1930. This increase was widespread throughout the state but was particularly strong in farming-type areas 2, 3, and 5, where hog production is heavier than in other areas. In 1954, hog numbers were still greater than in 1950.

Sheep numbers, made up largely of small farm flocks, declined rather steadily, the decrease from 1930 to 1950 amounting to 40 percent. Throughout the state some counties showed much greater declines than others in the same area. After 1950, the number of sheep increased somewhat.

The number of chickens four months old and over declined 16 percent from 1930 to 1950. The number of eggs sold in 1950, however, was 14 percent greater, indicating a marked increase in egg production per hen. Since 1950, both chickens and eggs have increased in number. In some parts of the state, broiler production was introduced as a minor enterprise. The number of turkeys raised increased more than six times during the two decades, while the number of geese and ducks declined.

In the twenty-five-year period 1930 to 1955, Illinois farmers reacted to rapidly changing conditions. They adopted many technological changes; they supplanted much labor with additional equipment; many enlarged the size of their units; they increased the production per man; and many of them grew fewer products and specialized their production. These many changes, which have taken place in response to economic shifts and national needs, demonstrate that Illinois agriculture is a highly dynamic business.

17M—4-56—59185